



Service Manual

Service Manual

MG295/MG296/KG296



Model : MG295/MG296/KG296

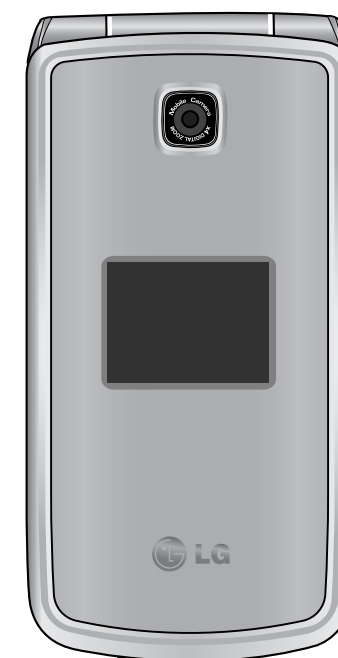


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1. INTRODUCTION

1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of this model.

1.2 Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services. System users are responsible for the security of own system. There are may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. The manufacturer does not warrant that this product is immune from the above case but will prevent unauthorized use of common-carrier telecommunication service of facilities accessed through or connected to it. The manufacturer will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the this phone or compatibility with the network, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

D. Maintenance Limitations

Maintenance limitations on this model must be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs expect as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

1. INTRODUCTION

E. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

F. Pictures

The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

G. Interference and Attenuation

Phone may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

H. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated  by the sign. Following information is ESD handling:

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

1.3 Abbreviations

For the purposes of this manual, following abbreviations apply:

APC	Automatic Power Control
BB	Baseband
BER	Bit Error Ratio
CC-CV	Constant Current - Constant Voltage
DAC	Digital to Analog Converter
DCS	Digital Communication System
dBm	dB relative to 1 milli watt
DSP	Digital Signal Processing
EEPROM	Electrical Erasable Programmable Read-Only Memory
ESD	Electrostatic Discharge
FPCB	Flexible Printed Circuit Board
GMSK	Gaussian Minimum Shift Keying
GPIO	General Purpose Interface Bus
GSM	Global System for Mobile Communications
IPUI	International Portable User Identity
IF	Intermediate Frequency
LCD	Liquid Crystal Display
LDO	Low Drop Output
LED	Light Emitting Diode
OPLL	Offset Phase Locked Loop

1. INTRODUCTION

PAM	Power Amplifier Module
PCB	Printed Circuit Board
PGA	Programmable Gain Amplifier
PLL	Phase Locked Loop
PSTN	Public Switched Telephone Network
RF	Radio Frequency
RLR	Receiving Loudness Rating
RMS	Root Mean Square
RTC	Real Time Clock
SAW	Surface Acoustic Wave
SIM	Subscriber Identity Module
SLR	Sending Loudness Rating
SRAM	Static Random Access Memory
PSRAM	Pseudo SRAM
STMR	Side Tone Masking Rating
TA	Travel Adapter
TDD	Time Division Duplex
TDMA	Time Division Multiple Access
UART	Universal Asynchronous Receiver/Transmitter
VCO	Voltage Controlled Oscillator
VCTCXO	Voltage Control Temperature Compensated Crystal Oscillator
WAP	Wireless Application Protocol

2. PERFORMANCE

2.1 H/W Features

Item	Feature	Comment
Standard Battery	Li-ion, 3.7V 830mAh	
Talk time	Up to 200min : GSM Tx Level 7	
Stand by time	Up to 200 hours (Paging Period: 5, RSSI: -85 dBm)	
Charging time	Approx. 2.5 hours	
RX Sensitivity	GSM850: -102dBm, DCS: -102dBm, PCS: -102dBm	
TX output power	GSM, EGSM: 32.5dBm(Level 5), DCS , PCS: 29.5dBm(Level 0)	
GPRS compatibility	Class 10	
SIM card type	3V,1.8V Small	
Display	MAIN : TFT 128 x 160 pixel 262K Color SUB : CSTN 96*64 pixel 65K Color	
Status Indicator	Hard icons. Key Pad 0 ~ 9, #, *, Up/Down/Left/Right/Ok Navigation Key Menu Key, Clear Key, Back Key, Confirm Key Send Key, Volume Key, PWR Key, Camera Key, Hot Key	
ANT	Internal	
EAR Phone Jack	Yes (Stereo)	
PC Synchronization	Yes	
Speech coding	EFR/FR/HR	
Data	Yes	
Vibrator	Yes	
Loud Speaker	Yes	
Voice Recoding	Yes	
Microphone	Yes	
Speaker/Receiver	One way speaker	
Travel Adapter	Yes	
MIDI	SW MIDI (Mono SPK)	
Camera	1.3M	
Bluetooth / FM Radio	Bluetooth version 2.0+EDR / 76~108MHz supported	

2. PERFORMANCE

2.2 Technical Specification

Item	Description	Specification					
1	Frequency Band	GSM • TX: $890 + n \times 0.2 \text{ MHz}$ • RX: $935 + n \times 0.2 \text{ MHz}$ ($n=1\sim124$) PCS • TX: $1850 + (n-512) \times 0.2 \text{ MHz}$ • RX: $1930 + (n-512) \times 0.2 \text{ MHz}$ ($n=512\sim810$) DCS • TX: $1710 + (n-512) \times 0.2 \text{ MHz}$ • RX: $1805 + (n-512) \times 0.2 \text{ MHz}$ ($n=512\sim885$)					
2	Phase Error	RMS < 5 degrees Peak < 20 degrees					
3	Frequency Error	< 0.1 ppm					
4	Power Level	GSM					
		Level	Power	Toler.	Level	Power	Toler.
		5	33 dBm	$\pm 2\text{dB}$	13	17 dBm	$\pm 3\text{dB}$
		6	31 dBm	$\pm 3\text{dB}$	14	15 dBm	$\pm 3\text{dB}$
		7	29 dBm	$\pm 3\text{dB}$	15	13 dBm	$\pm 3\text{dB}$
		8	27 dBm	$\pm 3\text{dB}$	16	11 dBm	$\pm 5\text{dB}$
		9	25 dBm	$\pm 3\text{dB}$	17	9 dBm	$\pm 5\text{dB}$
		10	23 dBm	$\pm 3\text{dB}$	18	7 dBm	$\pm 5\text{dB}$
		11	21 dBm	$\pm 3\text{dB}$	19	5 dBm	$\pm 5\text{dB}$
		12	19 dBm	$\pm 3\text{dB}$			
		DCS/PCS					
		Level	Power	Toler.	Level	Power	Toler.
		0	30 dBm	$\pm 2\text{dB}$	8	14 dBm	$\pm 3\text{dB}$
		1	28 dBm	$\pm 3\text{dB}$	9	12 dBm	$\pm 4\text{dB}$
		2	26 dBm	$\pm 3\text{dB}$	10	10 dBm	$\pm 4\text{dB}$
		3	24 dBm	$\pm 3\text{dB}$	11	8 dBm	$\pm 4\text{dB}$
		4	22 dBm	$\pm 3\text{dB}$	12	6 dBm	$\pm 4\text{dB}$
		5	20 dBm	$\pm 3\text{dB}$	13	4 dBm	$\pm 4\text{dB}$
		6	18 dBm	$\pm 3\text{dB}$	14	2 dBm	$\pm 5\text{dB}$
		7	16 dBm	$\pm 3\text{dB}$	15	0 dBm	$\pm 5\text{dB}$

2. PERFORMANCE

Item	Description	Specification	
5	Output RF Spectrum (due to modulation)	GSM, EGSM	
		Offset from Carrier (kHz).	Max. dBc
		100	+0.5
		200	-30
		250	-33
		400	-60
		600~ <1,200	-60
		1,200~ <1,800	-60
		1,800~ <3,000	-63
		3,000~ <6,000	-65
		6,000	-71
		DCS/PCS	
		Offset from Carrier (kHz).	Max. dBc
		100	+0.5
		200	-30
		250	-33
		400	-60
		600~ <1,200	-60
		1,200~ <1,800	-60
		1,800~ <3,000	-65
		3,000~ <6,000	-65
		6,000	-73
6	Output RF Spectrum (due to switching transient)	GSM, EGSM	
		Offset from Carrier (kHz)	Max. (dBm)
		400	-19
		600	-21
		1,200	-21
		1,800	-24

2. PERFORMANCE

Item	Description	Specification		
6	Output RF Spectrum (due to switching transient)	PCS		
		Offset from Carrier (kHz).		Max. (dBm)
		400		-22
		600		-24
		1,200		-24
		1,800		-27
7	Spurious Emissions	Conduction, Emission Status		
8	Bit Error Ratio	GSM, EGSM BER (Class II) < 2.439% @-102 dBm DCS,PCS BER (Class II) < 2.439% @-102 dBm		
9	RX Level Report Accuracy	±3 dB		
10	SLR	8 ±3 dB		
11	Sending Response	Frequency (Hz)	Max.(dB)	Min.(dB)
		100	-12	-
		200	0	-
		300	0	-12
		1,000	0	-6
		2,000	4	-6
		3,000	4	-6
		3,400	4	-9
		4,000	0	-
12	RLR	2 ±3 dB		
13	Receiving Response	Frequency (Hz)	Max.(dB)	Min.(dB)
		100	-12	-
		200	0	-
		300	2	-7
		500	*	-5
		1,000	0	-5
		3,000	2	-5
		3,400	2	-10
		4,000	2	
		* Mean that Adopt a straight line in between 300 Hz and 1,000 Hz to be Max. level in the range.		

2. PERFORMANCE

Item	Description	Specification	
14	STMR	13 ±5 dB	
15	Stability Margin	> 6 dB	
16	Distortion	dB to ARL (dB)	Level Ratio (dB)
		-35	17.5
		-30	22.5
		-20	30.7
		-10	33.3
		0	33.7
		7	31.7
		10	25.5
17	Side Tone Distortion	Three stage distortion < 10%	
18	System frequency (13 MHz) tolerance	≤ 2.5ppm	
19	32.768KHz tolerance	≤ 30ppm	
20	Ringer Volume	At least 65 dBspl under below conditions: 1. Ringer set as ringer. 2. Test distance set as 50 cm	
21	Charge Current	Fast Charge : < 600 mA Slow Charge : < 120 mA	
22	Antenna Display	Antenna Bar Number	Power
		5	-85 dBm ~
		4	-90 dBm ~ -86 dBm
		3	-95 dBm ~ -91 dBm
		2	-100 dBm ~ -96 dBm
		1	-105 dBm ~ -101 dBm
		0	~ -105 dBm
23	Battery Indicator	Battery Bar Number	Voltage
		0	3.56V ± 0.05 V
		1	3.66V ± 0.05 V
		2	3.74V ± 0.05 V
		3	3.85V ± 0.05 V
		4	3.86V ± 0.05 V ~
24	Low Voltage Warning	3.56 ± 0.05 V (Call) every 1 minutes	
		3.50 ± 0.05 V (Standby)	

2. PERFORMANCE

Item	Description	Specification
25	Forced shut down Voltage	3.35 \pm 0.03V
26	Battery Type	1 Li-ion Battery Standard Voltage = 3.7 V Battery full charge voltage = 4.2 V Capacity: 830mAh
27	Travel Charger	Switching-mode charger Input: 100 ~ 240 V, 50/60 Hz Output: 5.1 V, 700 mA

3. TECHNICAL BRIEF

3.1 Power Amplifier (SKY77318, U502)

The SKY77318 Power Amplifier Module (PAM) is designed in a low profile (1.2 mm), compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, and PCS1900 operation. The PAM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation. The module consists of separate GSM850/900 PA and DCS1800/PCS1900 PA blocks, impedancematching circuitry for 50 Ω input and output impedances, and a Power Amplifier Control (PAC) block with an internal current-sense resistor. The custom BiCMOS integrated circuit provides the internal PAC function and interface circuitry. Fabricated onto a single Gallium Arsenide (GaAs) die, one Heterojunction Bipolar Transistor (HBT) PA block supports the GSM850/900 bands and the other supports the DCS1800 and PCS1900 bands. Both PA blocks share common power supply pins to distribute current. The GaAs die, the Silicon (Si) die, and the passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic over mold. RF input and output ports of the SKY77318 are internally matched to a 50 Ω load to reduce the number of external components for a quad-band design. Extremely low leakage current (2.5 μ A, typical) of the dual PA module maximizes handset standby time. The SKY77318 also contains band-select switching circuitry to select GSM (logic 0) or DCS/PCS (logic 1) as determined from the Band Select (BS) signal. In Figure 3.1 below, the BS pin selects the PA output (DCS/PCS OUT or GSM850/900 OUT) and the Analog Power Control (VAPC) controls the level of output power. The VBATT pin connects to an internal current-sense resistor and interfaces to an integrated power amplifier control (iPAC™) function, which is insensitive to variations in temperature, power supply, process, and input power. The ENABLE input allows initial turn-on of PAM circuitry to minimize battery drain.

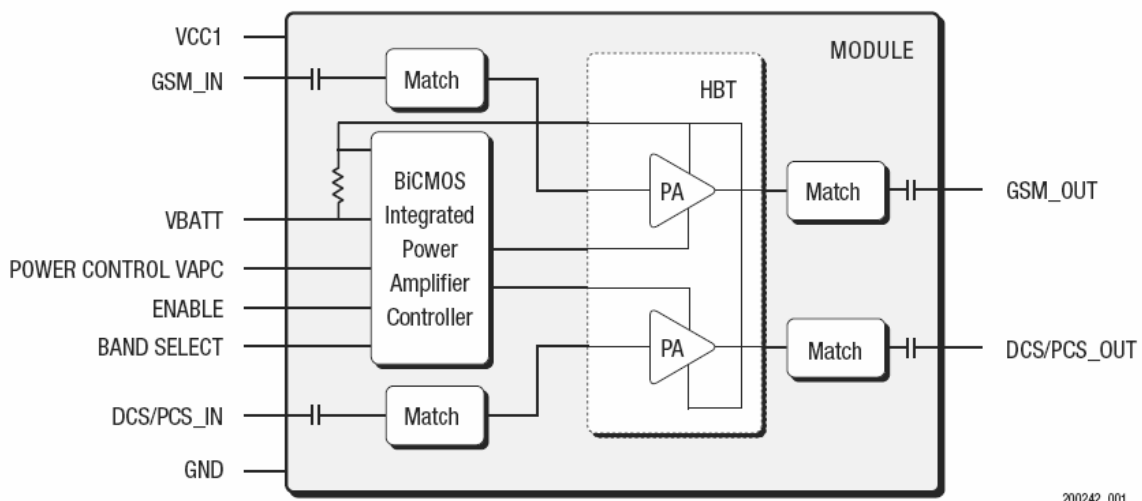
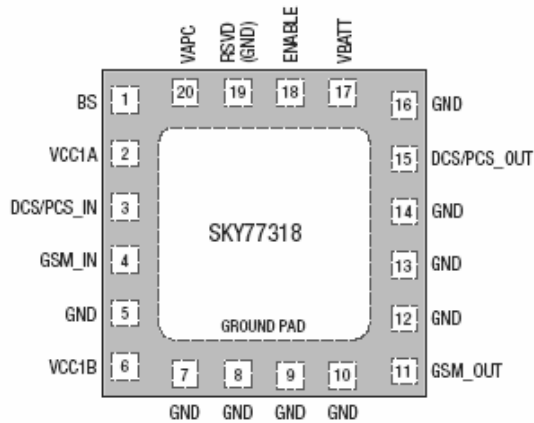


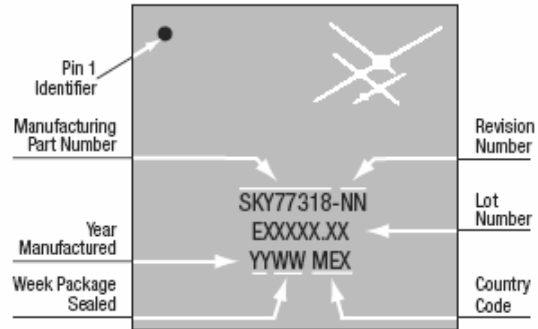
Figure 3.1 Functional Block Diagram

3. TECHNICAL BRIEF



Pad layout as seen from top view looking through the package.

200424_005



200424_005

SKY77318 PAM Pin Configuration-20-Pin Leadless (Top View)

Typical Case Markings

Table 4. SKY77318 Pin Names and Signal Descriptions

Pin	Name	Description
1	BS	Band Select
2	VCC1A	VCC (to GSM 1st stage, DCS/PCS 1st stages, BiCMOS PAC)
3	DCS/PCS IN	RF input 1710-1910 MHz (DCS1800, PCS1900)
4	GND IN	RF input 880-915 MHz (GSM)
5	GND	RF and DC Ground
6	VCC1B	RF and DC Ground
7	GND	RF and DC Ground
8	GND	RF and DC Ground
9	GND	RF and DC Ground
10	GND	RF and DC Ground
11	GSM OUT	RF Output 880-915 MHz (GSM)
12	GND	RF and DC Ground
13	GND	RF and DC Ground
14	GND	RF and DC Ground
15	DCS/PCS_OUT	RF Output 1710-1910 MHz (DCS 1800, PCS1900)
16	GND	RF and DC Ground
17	VBATT	Battery input to high side of internal sense resistor
18	ENABLE	BiCMOS Enable
19	RSVD(GND)	RF and DC Ground
20	VAPC	Power Control Bias Voltage
GND PAD	GND	Ground Pad, device underside

3.2 Transceiver (AD6548, U503)

The AD6548 provides a highly integrated direct conversion radio solution that combines, on a single chip, all radio and power management functions necessary to build the most compact GSM radio solution possible. The only external components required for a complete radio design are the Rx SAWs, PA, Switchplexer and a few passives enabling an extremely small cost effective GSM Radio solution. The AD6548 uses the industry proven direct conversion receiver architecture of the Othello™ family. For Quad band applications the front end features four fully integrated programmable gain differential LNAs. The RF is then down converted by quadrature mixers and then fed to the baseband programmable-gain amplifiers and active filters for channel selection. The Receiver output pins can be directly connected to the baseband analog processor. The Receive path features automatic calibration and tracking to remove DC offsets. The transmitter features a translation-loop architecture for directly modulating baseband signals onto the integrated TX VCO.

The translation-loop modulator and TX VCO are extremely low noise removing the need for external SAW filters prior to the PA. The AD6548 uses a single integrated LO VCO for both the receive and the transmit circuits. The synthesizer lock times are optimized for GPRS applications up to and including class 12. AD6548 incorporates a complete reference crystal calibration system. This allows the external VCTCXO to be replaced with a low cost crystal. No other external components are required. The AD6548 uses the traditional VCTCXO reference source. The AD6548 also contains on-chip low dropout voltage regulators (LDOs) to deliver regulated supply voltages to the functions on chip, with a battery input voltage of between 2.9V and 5.5V. Comprehensive power down options are included to minimize power consumption in normal use. A standard 3 wire serial interface is used to program the IC. The interface features low-voltage digital interface buffers compatible with logic levels from 1.6V to 2.9V.

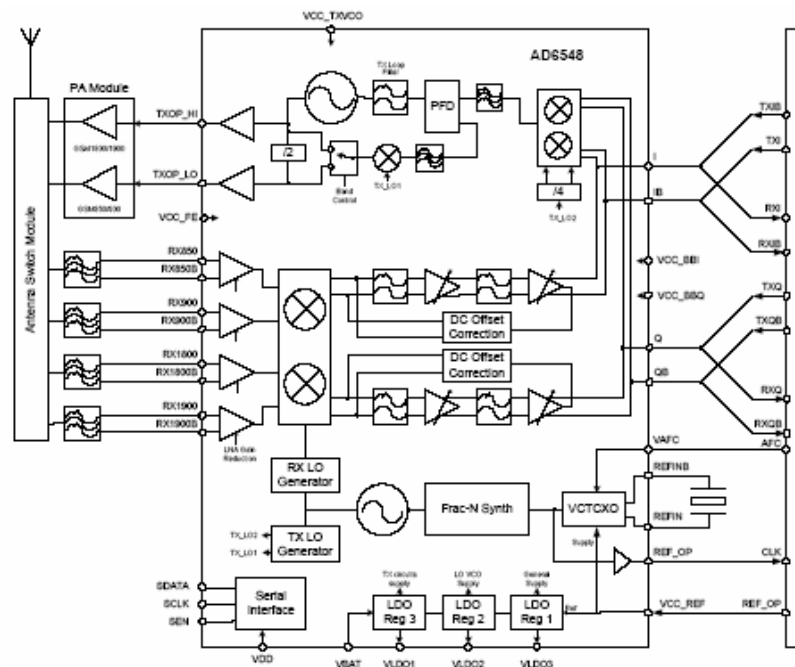
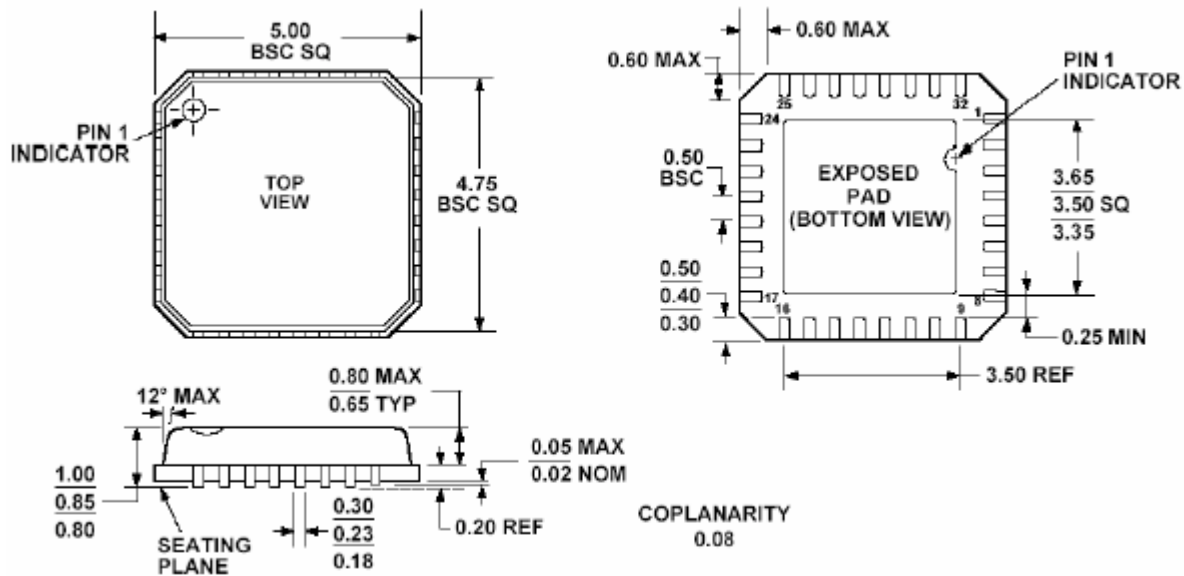


Figure 3.2 AD6548 Block Diagram

3. TECHNICAL BRIEF



COMPLIANT TO JEDEC STANDARDS MO-220-VHHD-2

AD6548/9 Pin Descriptions

No	Name	Description	No	Name	Description
1	VCC_FE	Front end supply (IP)	17	VCC_REF	Reference Oscillator Supply (IP)
2	I	I baseband input/output	18	VAFC/ N/C	AD6548 Crystal Freq control (IP) AD6549: Spare Pin
3	IB	I baseband input/output	19	REFIN	Crystal Connection
4	VCC_BBI	Baseband I, TX path supply (IP)	20	REFINB	Crystal Connection
5	SDATA	Serial port data	21	REF_OP	Reference Frequency Output
6	SCLK	Serial port clock	22	QB	Q baseband input/output
7	SEN	Serial port enable	23	Q	Q baseband input/output
8	N/C	Not connected	24	VCC_BBQ	Baseband Q supply (IP)
9	VLDO3	TX LDO Output (1)	25	RX1900B	PCS 1900 LNA input
10	TXOP_LO	Transmit O/P (850/900MHz)	26	RX1900	PCS 1900 LNA input
11	TXOP_HI	Transmit O/P (1800/1900MHz)	27	RX1800B	DCS 1800 LNA input
12	VCC_TXVCO	TX VCO supply (1)	28	RX1800	DCS 1800 LNA input
13	VDD	Serial interface supply	29	RX900B	E-GSM LNA input
14	VBAT	Battery I/P for LDO reg's	30	RX900	E-GSM LNA input
15	VLDO1	LDO regulator Output (2)	31	RX850B	GSM 850 LNA input
16	VLDO2	LO VCO Supply (3)	32	RX850	GSM 850 LNA input

Notes:

1. Supply regulated by internal LDO3 and should not be connected to any other supply
2. Internally connected as Synth supply (Counters + SDM + Charge pump)
3. Supply regulated by internal LDO2 and should not be connected to any other supply

3.3 FEM for Triband(FL501)

Select Mode	ANT_SW1	ANT_SW2	ANT_SW3
GSM Rx	L	H	H
EGSM Rx	L	H	L
DCS Rx	L	L	H
PCS Rx	L	L	L
GSM/EGSM Tx	H	L	L
DCS/PCS Tx	H	H	L

Table 3.3.1 Band SW Logic Table

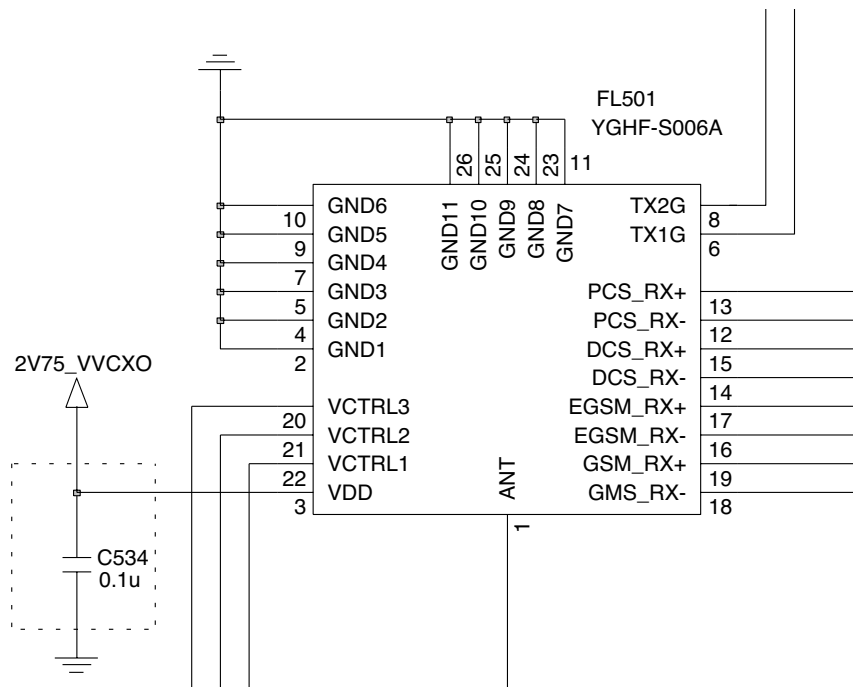


Figure 3.3.1 FEM CIRCUIT DIAGRAM

3. TECHNICAL BRIEF

3.4 26 MHz Clock (Crystal, X501)

The 26 MHz clock (X501) consists of a XO(Crystal Oscillator) which oscillates at a frequency of 26 MHz. The AD6548 requires only an external low cost crystal as the frequency reference. The circuitry to oscillate the crystal and tune its frequency is fully integrated. The Oscillator is a balanced implementation requiring the crystal to be connected across 2 pins. There is a programmable capacitor array included for coarse tuning of fixed offsets (e.g. crystal manufacturing tolerance), and an integrated varactor for dynamic control. The oscillator is designed for use with a 26MHz crystal. Dedicated control software ensures excellent frequency stability under all circumstances.

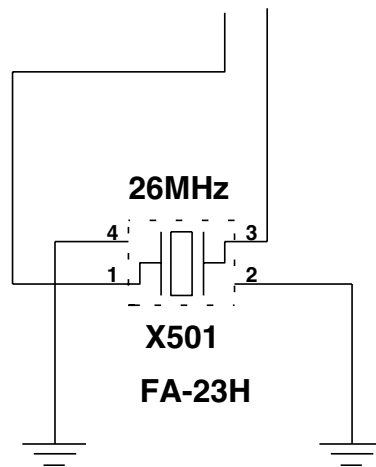


Figure 3.4 CRYSTAL CIRCUIT DIAGRAM

3.5 Baseband Processor (AD6721 , U103)

- AD6721 is an ADI designed processor
- AD6721 consists of
 1. Control Processor Subsystem including:
 - 32-bit MCU ARM7TDMI® Control Processor
 - 65 MHz operation at 1.8V
 - 2Mb of on-chip System SRAM Memory
 2. DSP Subsystem including:
 - 16-bit Fixed Point DSP Processor
 - 91 MIPS[1] at 1.8V
 - Data and Program SRAM
 - Program Instruction Cache
 - Full Rate, Enhanced Full Rate and Half Rate
 - Speech Encoding/Decoding
 - Capable of Supporting AMR & PDC Speech Algorithms
 3. Peripheral Functions
 - Parallel and Serial Display Interface
 - USB 2.0 Full Speed device Interface
 - Keypad Interface
 - Flash Memory Interface
 - Page-Mode Flash Support
 - 1.8V and 3.0V, 64 kbps SIM Interface
 - Universal System Connector Interface
 - Data Services Interface
 - Battery Interface (e.g. Dallas)
 4. Other
 - Supports 13 MHz and 26 MHz Input Clocks
 - 1.8V Typical Core Operating Voltages
 - 361-Ball Package (13x13mm) , 0.65mm Ball pitch
 5. The AD6721 baseband transmit section supports the following mobile station GMSK modulation power classes:
 - GSM 900/850 power classes 4 and 5,
 - DCS 1800 power classes 1 and 2, and
 - PCS 1900 power classes 1 and 2

3. TECHNICAL BRIEF

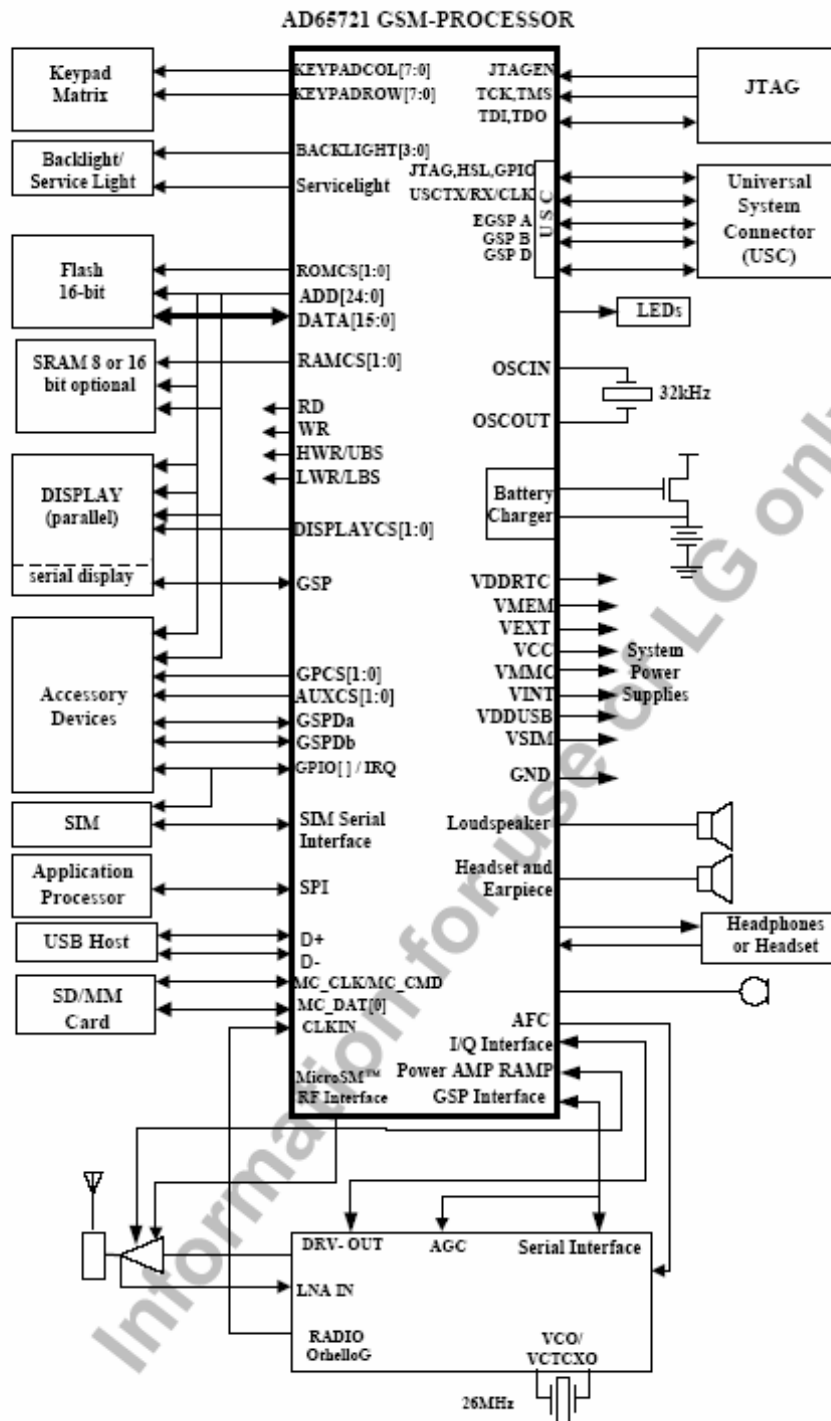


Figure 3.5 SYSTEM INTERCONNECTION OF AD6721 EXTERNAL INTERFACE

3.5.1 Interconnection with external devices

A. RTC block interface

Countered by external X-TAL

The X-TAL oscillates 32.768KHz

B. LCD module interface

The LCD module is controlled by Mobile Media Processor AIT813

If AIT813 is in the state of by-pass mode, the LCD control signals from AD6721 are by-passed through AIT813.

In operating mode, the AIT813 controls the LCD module through L_MAIN_LCD_CS, L_SUB_LCD_CS, LCD_RESET, LCD_RS, LCD_WR, L_DATA[15-00], 2V8_MV, LCD_IF, LCD_ID.

Signals	Description
L_MAIN_LCD_CS	MAIN LCD driver chip enable. MAIN LCD driver IC has own CS pin
L_SUB_LCD_CS	SUB LCD driver chip enable. SUB LCD driver IC has own CS pin
LCD_ID	Select LCD module maker(2.8V : SHARP, 0V : LGIT)
LCD_RESET	This pin resets LCD module. This signal comes from AD6721 directly.
LCD_WR	Enable writing to LCD Driver.
LCD_RD	Enable reading to LCD Driver.
LCD_RS	This pin determines whether the data to LCD module are display data or control data. LCD_RS can select 16 bit parallel bus.
2V8_CAM	2.8V voltage is supplied to LCD driver IC.
IF_MODE	Select 16bits or 8bits interface mode for MAIN LCD. For the future

Table 3.5.B LCD CONTRON SIGNALS DISCRIPTION

3. TECHNICAL BRIEF

The backlight of LCD module is controlled by AD6721 via AAT3155.
The control signals related to Backlight LED are given bellow.

Signals	Description
MLED	Current source for backlight LED
LCD_DIM_CTRL	Control LCD backlight level in 16 steps
MLED[1:4]	This pins are returned-paths for backlight LED current source (MLED)

Table 3.5.B2 DESCRIPTION OF LCD BACKLIGHT LED CONTROL

C. RF interface

The AD6721 control RF parts through PA_BAND, ANT_SW1, ANT_SW2, ANT_SW3 , CLKON , PA_EN, S_EN, S_DATA, S_CLK

Signals	Description
PA_BAND (GPO 17)	PAM Band Select
ANT_SW1 (GPO 9)	Antenna switch Band Select
ANT_SW2 (GPO 10)	Antenna switch Band Select
PA_EN (GPO 16)	PAM Enable/Disable
S_EN (GPO 19)	PLL Enable/Disable
S_DATA (GPO 20)	Serial Data to PLL
S_CLK (GPO 21)	Clock to PLL

Table 3.5.C RF CONTROL SIGNALS DESCRIPTION

D. SIM interface

The AD6721 provides SIM Interface Module. The AD6721 checks status periodically during established call mode whether SIM card is inserted or not, but it doesn't check during deep Sleep mode. In order to communicate with SIM card, 3 signals SIM_DATA, SIM_CLK, SIM_RST(GPIO_23) are required. The descriptions about the signals are given by bellow Table 3-5 in detail.

Signals	Description
SIM_DATA	This pin receives and sends data to SIM card. This model can support 3.0 volt and 1.8 volt interface SIM card.
SIM_CLK	Clock 3.25MHz frequency.
SIM_RST (GPIO_23)	Reset SIM block

Table 3.5.D SIM CONTROL SIGNALS DESCRIPTION

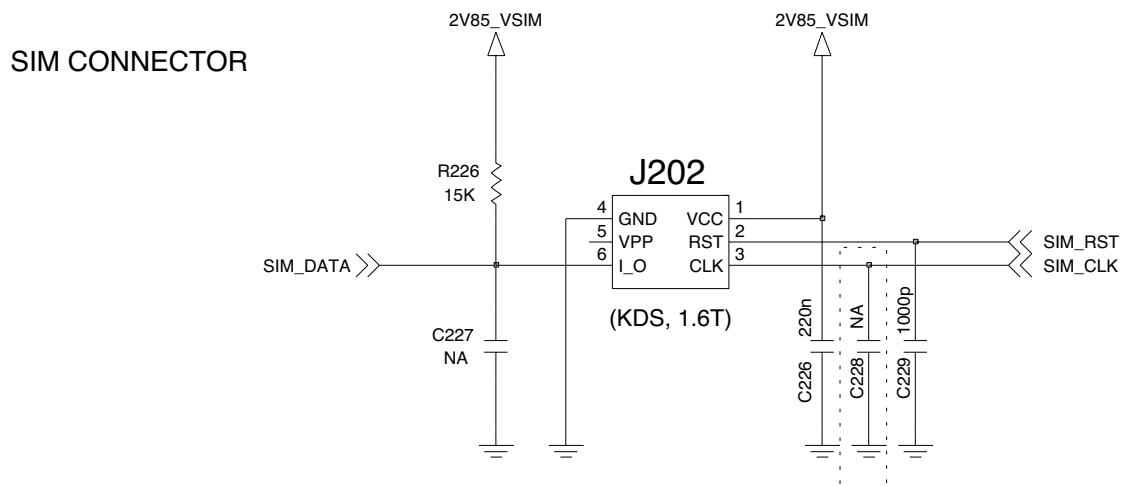


Figure 3.5.D2 SIM Interface of AD6721

3. TECHNICAL BRIEF

E. LDO Block

There are 9 LDOs in the AD6721.

- 1V8_VCORE : supplies Digital baseband Processor core and AD6721 digital core(1.8V, 80mA)
- 2V8_VMEM : supplies external memory and the interface to the external memory on the digital baseband processor (2.8V, 150mA)
- 2V8_VEXT : supplies Radio digital interface and high voltage interface (2.8V, 200mA)
- 2V85_VSIM : supplies the SIM interface circuitry on the digital processor and SIM card (2.85V, 1.8V, 20mA)
- 1V8_VRTC : supplies the Real-Time Clock module (1.8 V, 20 μ A)
- 2V5_VMIC : supplies the microphone interface circuitry (2.5 V, 2 mA)
- 2V75_VVCXO: supplies the voltage controlled crystal oscillator (2.75 V, 10 mA)
- VUSB:supplies USB interface circuitry(3.2V, 20mA)
- VGP: supplies VDD_IO3 of MMP(3.2V, 40mA)

3.6 Display and Interface

• Main LCD

Properties	Spec.	Unit
Active Screen Size	33.8mm(W) x 46.24mm(H)	mm
Color Depth	262K TFT	colors
Resolution	128 X RGB X 160	dots

• Sub LCD

Properties	Spec.	Unit
Active Screen Size	18.902mm(W) x 13.43mm(H)	mm
Color Depth	65K CSTN	colors
Resolution	96 X 64	dots

Controlled by L_MAIN_LCD_CS, L_SUB_LCD_CS, LCD_RESET, LCD_RS, LCD_WR, LCD_RD, LCD_IF, L_DATA[00:15] ports

- L_MAIN_LCD_CS : MAIN LCD driver chip enable. MAIN LCD driver IC has own CS pin
- LCD_RESET : This pin resets LCD module. This signal comes from AD6721 directly.
- LCD_RS: This pin determines whether the data to LCD module are display data or control data.
- LCD_WR : Write control Signal
- LCD_RD : Read control Signal. But this pin used only for debugging.
- L_DATA[00:15] : Parallel data lines.
- LCD_ID : LCD type selection signals
 - LCD_ID : LCD maker(0V for LGIT, 2.8V for Sharp)
- For using 262K color, data buses should be 16 bits.

3. TECHNICAL BRIEF

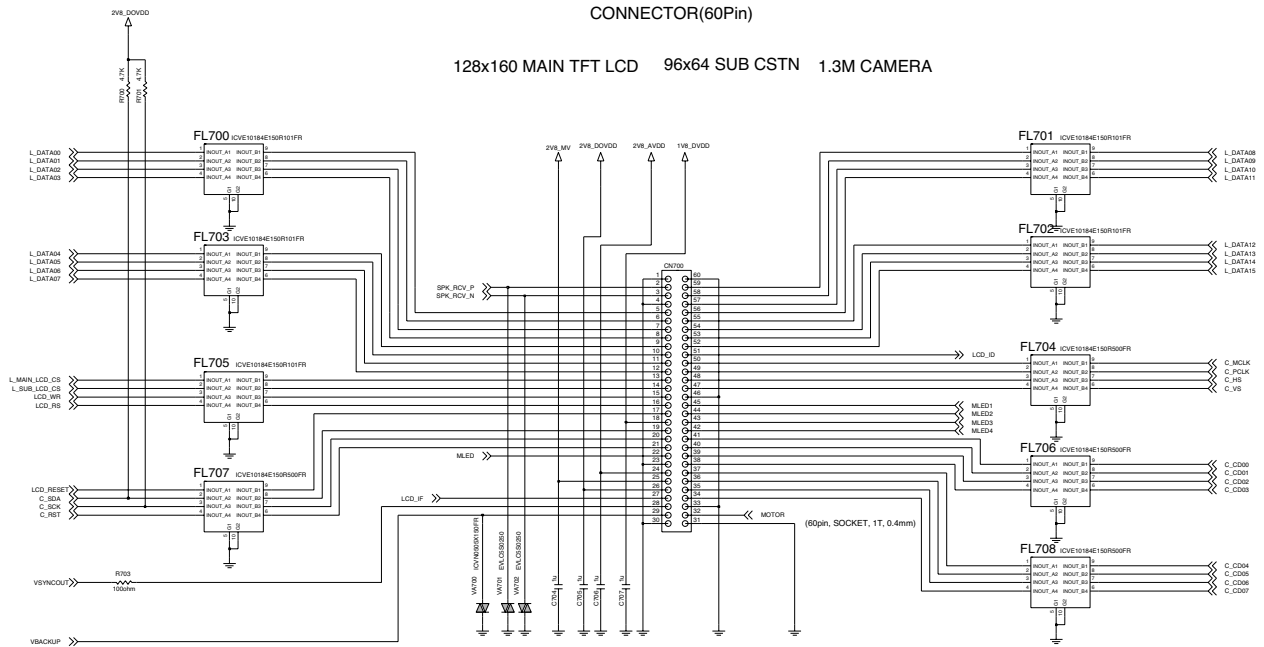


Figure 3.6 LCD INTERFACE CIRCUIT

3.7 Camera Interface(AIT813G , U402)

This model has a built-in 1.3M(1280 x 920) camera module. And the camera produces JPG pictures. Camera module is controlled by AIT813G. Interface is done by I2C and YCbCr format. I2C is a control signal and YCbCr is real data interface signal.

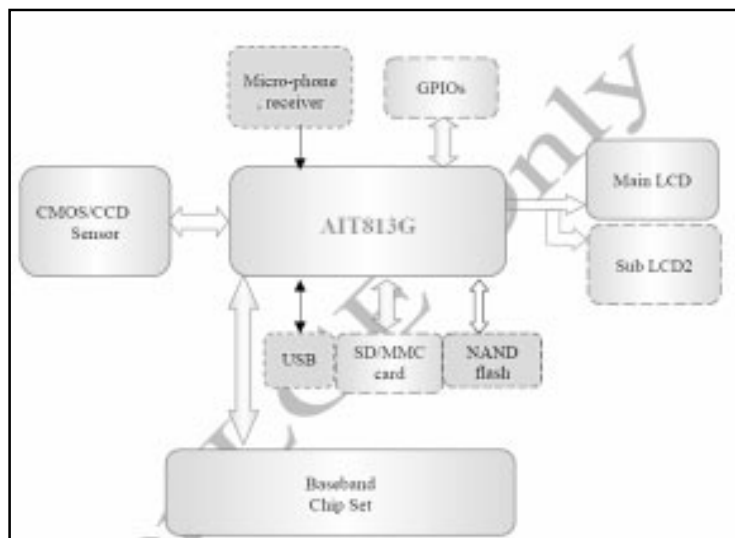


Figure 3.7.1 AIT813G BLOCK DIAGRAM

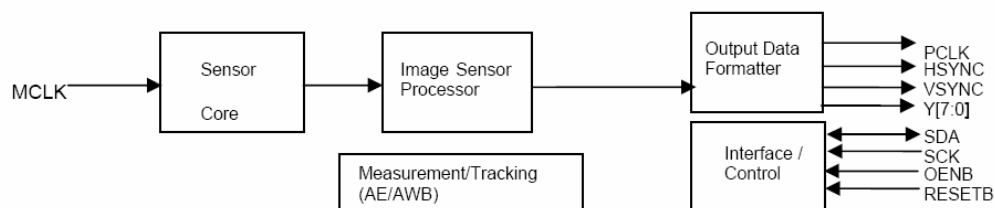


Figure 3.7.2 SENSOR CHIP BLOCK DIAGRAM

3. TECHNICAL BRIEF

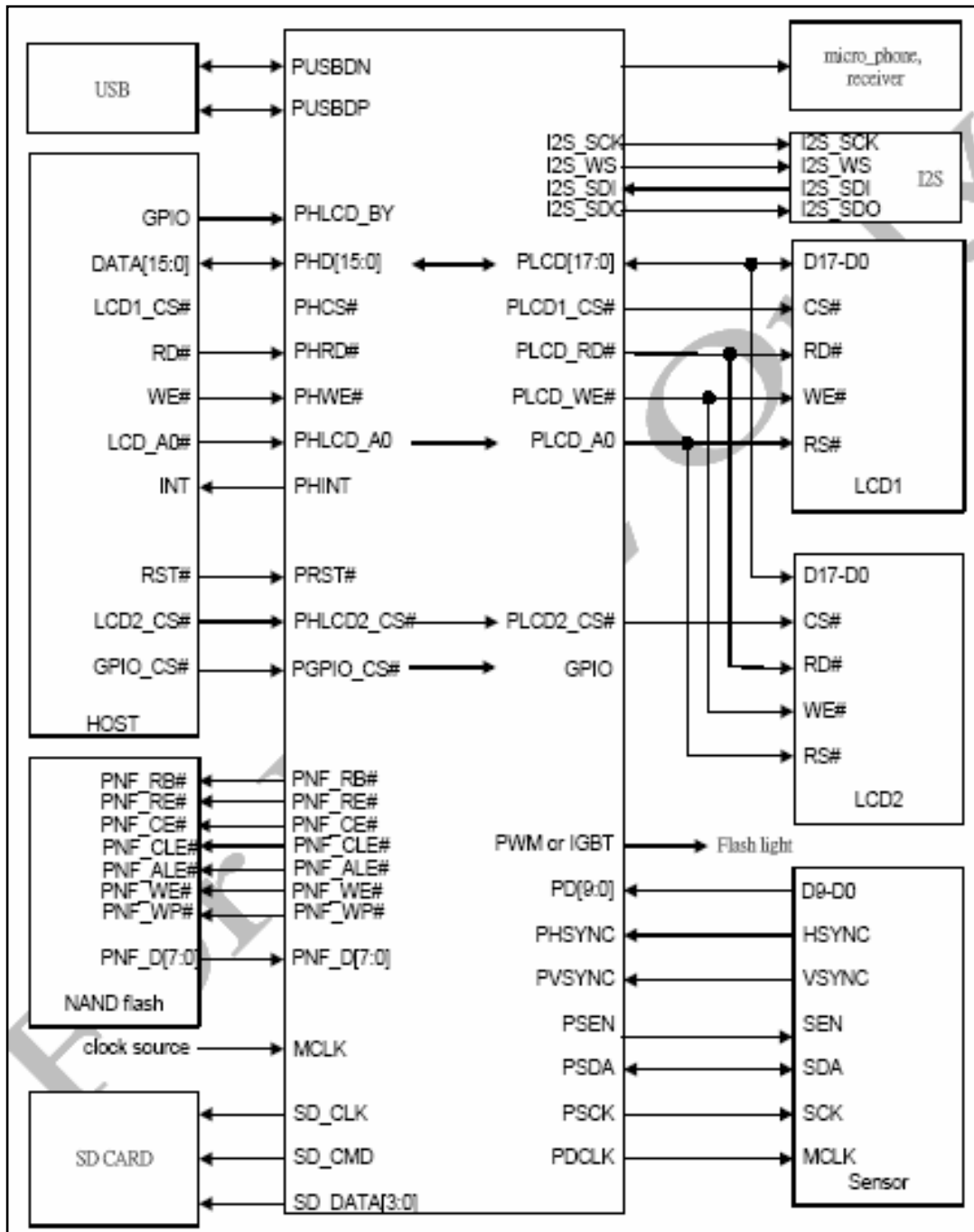


Figure 3.7.3 AIT813G CIRCUIT

3.8 Keypad Switches and Scanning

The key switches are metal domes, which make contact between two concentric pads on the keypad layer of the PCB when pressed. There are 27 switches (Normal Key 23EA, Volume up down and camera side key, PWR down side key), connected in a matrix of 6 rows by 5 columns, as shown in Figure 3-11, except for the power switch (END), which is connected independently. Functions, the row and column lines of the keypad are connected to ports of AD6721. The columns are outputs, while the rows are inputs and have pull-up resistors built in. When a key is pressed, the corresponding row and column are connected together, causing the row input to go low and generate an interrupt. The columns/rows are then scanned by AD6721 to identify the pressed key.

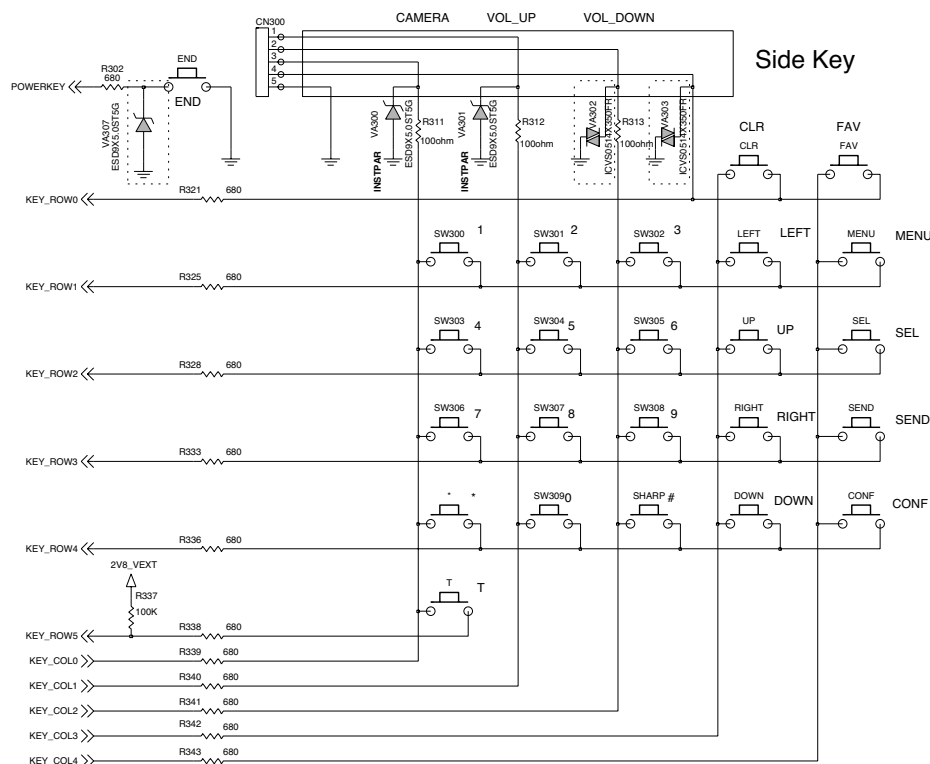


Figure 3.8 Keypad Switches and Scanning

3. TECHNICAL BRIEF

3.9 Microphone

The microphone is placed to the Front cover and contacted to main PCB. The audio signal is passed to MIC_N and MIC_P pins of AD6721. The voltage supply VMIC is output from AD6721, and is a biased voltage for the MIC_P. The MIC_P and MIC_N signals are then A/D converted by the voice band ADC part of AD6721.

The digitized speech (PCM 8KHz ,16KHz) is then passed to the DSP section of AD6721 for processing (coding, interleaving etc).

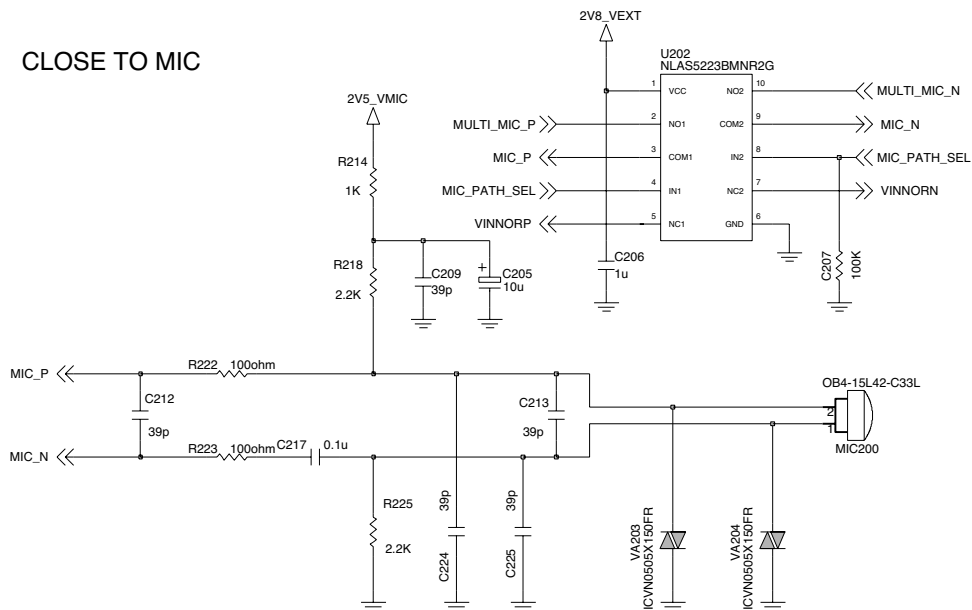
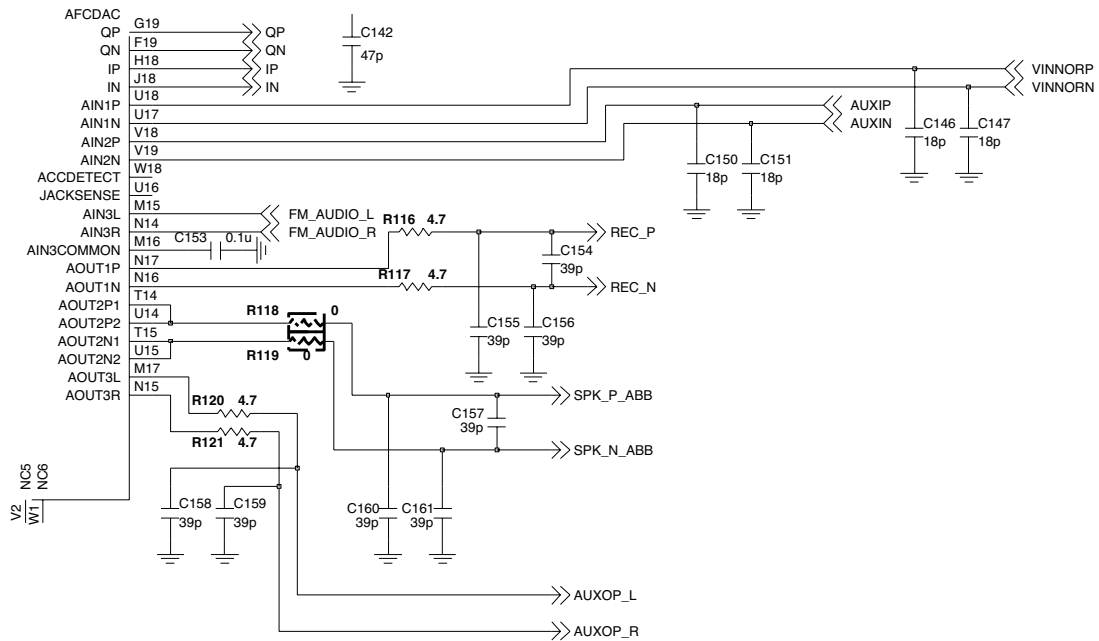


Figure 3.9 Connection between Microphone and AD6721

3.10 Main Speaker



ACOUSTIC & MIDI

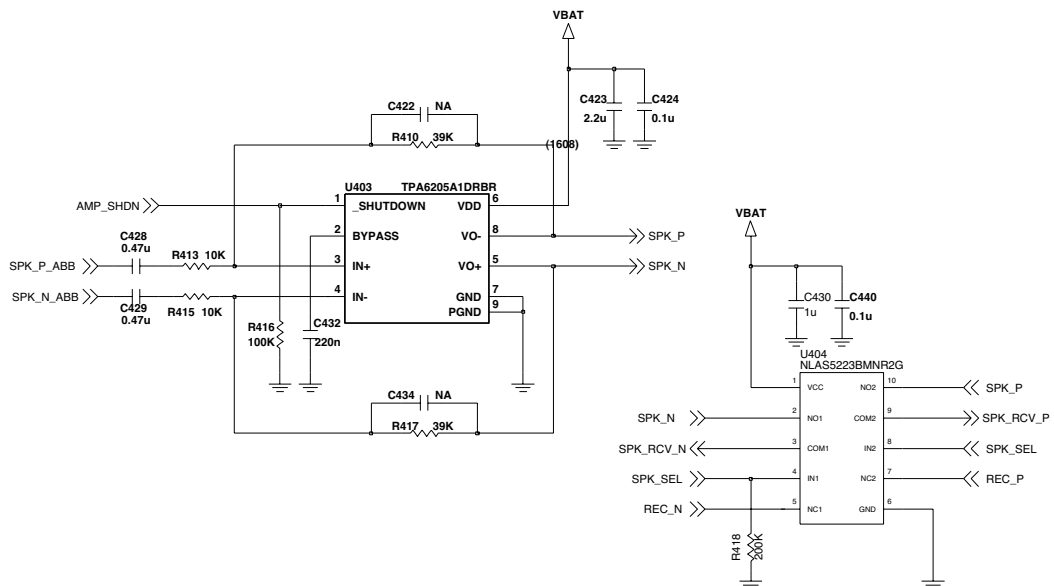


Figure 3.10 Connection between Speaker, Amp and AD6721

3.12 Key Back-light Illumination

In key back-light illumination, there are 12 White LEDs in Main Board, which are driven by KEY_BACKLIGHT3 signal from AD6721.

KEY BACKLIGHT

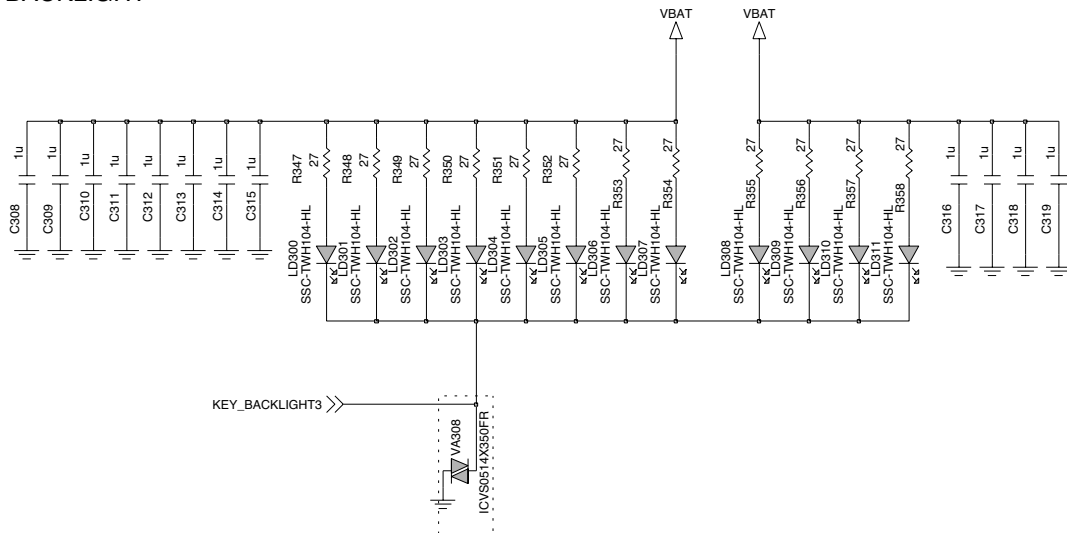


Figure 3.12 KEY BACK-LIGHT ILLUMINTION

3. TECHNICAL BRIEF

3.13 LCD Back-light Illumination

LCD backlight LEDs is controlled by AD6721 via AAT3155, U601.

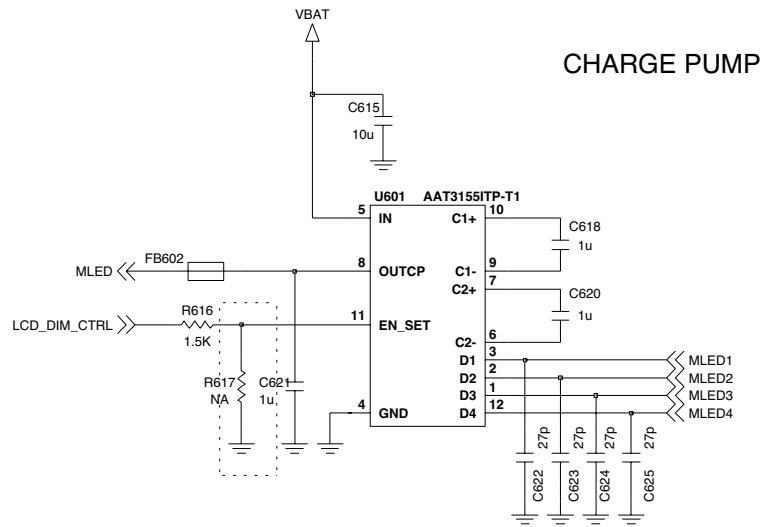


Figure 3.13 MAIN LCD BACKLIGHT ILLUMINATION

3.14 VIBRATOR

The vibrator is placed in the folder cover and contacted to LCD MODULE. The vibrator is driven from VIBRATOR (GPIO_3) of AD6721

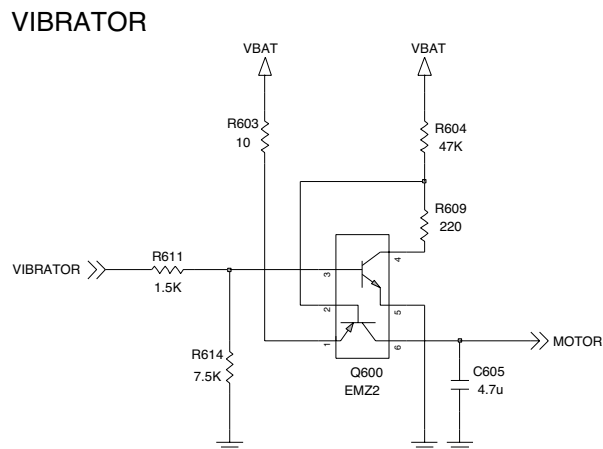


Figure 3.14 Vibrator

3.15 BLUETOOTH & FM Radio (BCM2048, U600)

The Broadcom BCM2048 is a monolithic single-chip, Bluetooth 2.0+EDR-compliant, baseband processor/2.4-GHz transceiver with an integrated FM and RDS/RBDS receiver. It features the highest level of integration and eliminates all critical external components, thereby minimizing the footprint, power consumption, and system cost of a Bluetooth plus FM radio solution.

The BCM2048 also supports key features of upcoming Bluetooth standards and offers a firmware migration path to new features. The BCM2048 is the optimal solution for any Bluetooth voice or and/or data application that also requires a FM radio receiver. The Bluetooth subsystem presents a Host Controller Interface (HCI) using a high speed UART and PCM for audio. The FM subsystem supports I2C compatible control interface and stereo analog output, as well as I2S and PCM interfaces. The BCM2048 incorporates all Bluetooth 2.0 features including eSCO, AFH, and Fast Connect as well as support for InConcert collaborative coexistence with WLAN devices.

The BCM2048 Bluetooth radio transceiver provides enhanced radio performance to meet the most stringent handset temperature applications or the tightest integration into mobile handsets and portable devices. It is fully compatible with any of the standard TCXO frequencies and provides full radio compatibility to operate simultaneously with GPS, WLAN, and cellular radios.

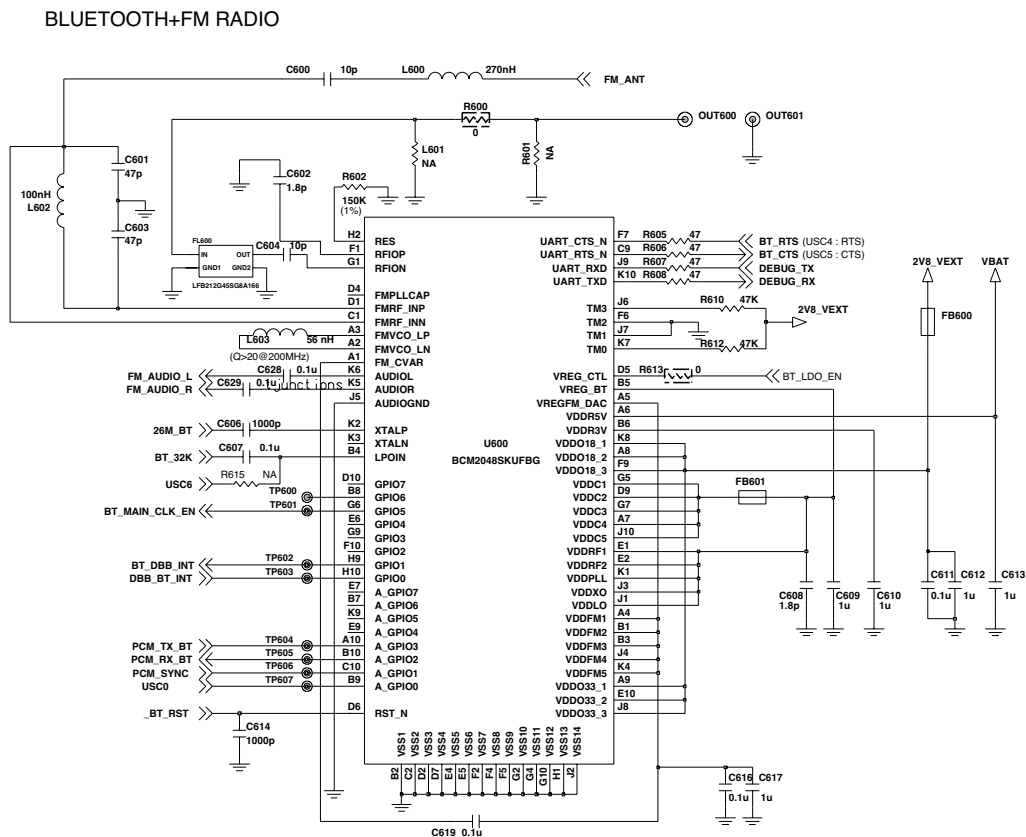


Figure 3.5 BCM2048 CIRCUIT DIAGRAM

3. TECHNICAL BRIEF

3.16 Battery Charging

The ISL6299 accepts two power inputs, normally one from a USB port and the other from a TA.

Charging Process

- Connecting TA & Charger Detection
- Control the charging Current by U102(Charger IC)
- Charging Current flows into the Battery.

Pins of U102 used for charging

- CRDL : Charger supply.
- USB: USB charging supply.
- IMIN: IMIN is the programmable input for the end-of-charge current.
- ICDL: Program the cradle charge current during the constantcurrent mode.
- _EN :Enable logic input
- BAT : Charger output pin.
- _CHG : Charge indication pin.

TA (Travel Adaptor)

- Input voltage: AC 100V ~ 250V, 63Hz
- Output voltage: DC 5.2V
- Output current: Max 700mA

Battery

- Li-ion battery (Max 4.2V, Nom 3.7V)
- Standard battery: Capacity - 830mAh

Charging current flow

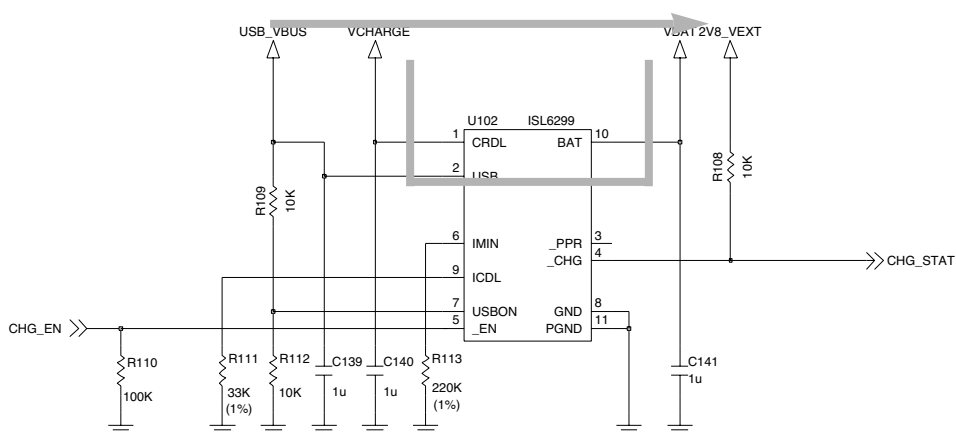


Figure 3.15 CIRCUIT FOR BATTERY CHARGING

4. TROUBLE SHOOTING

4.1 RF Component

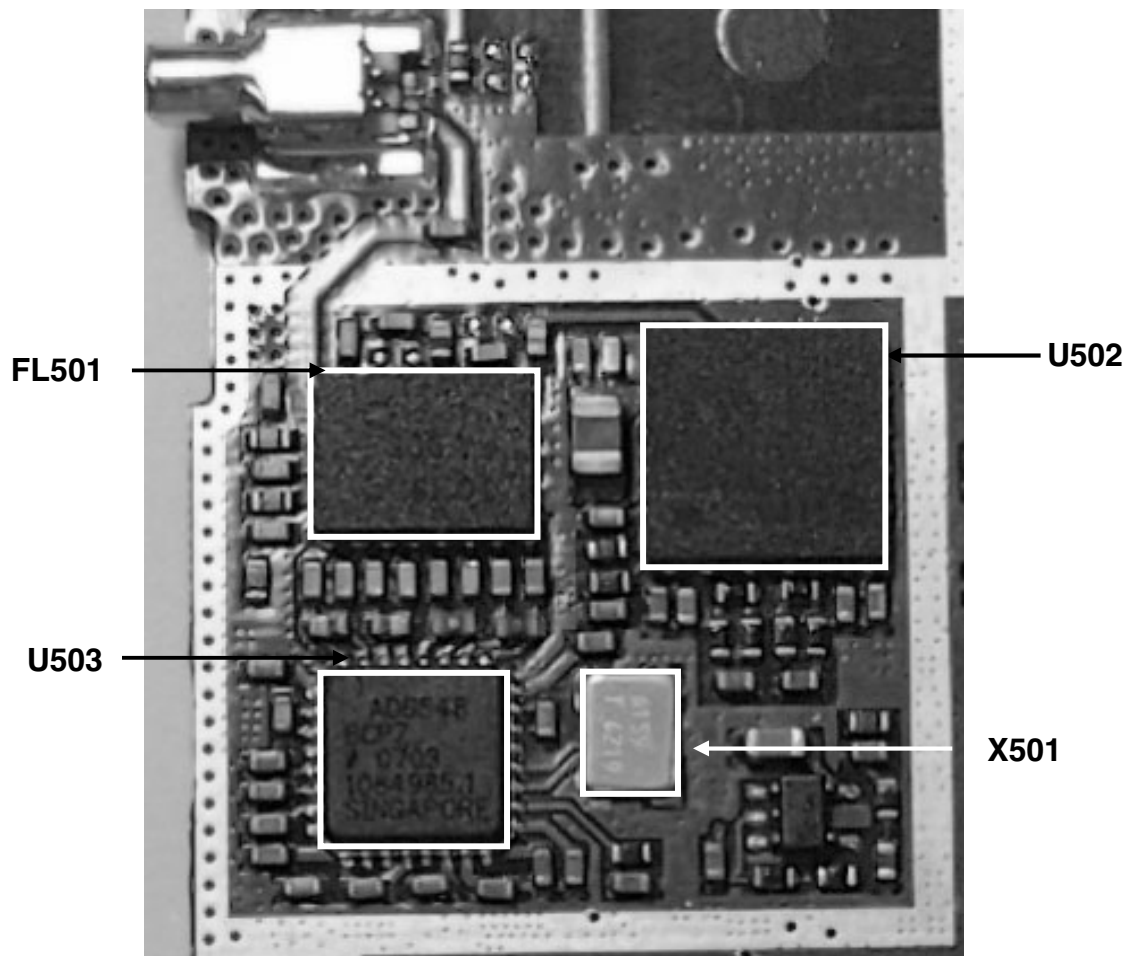


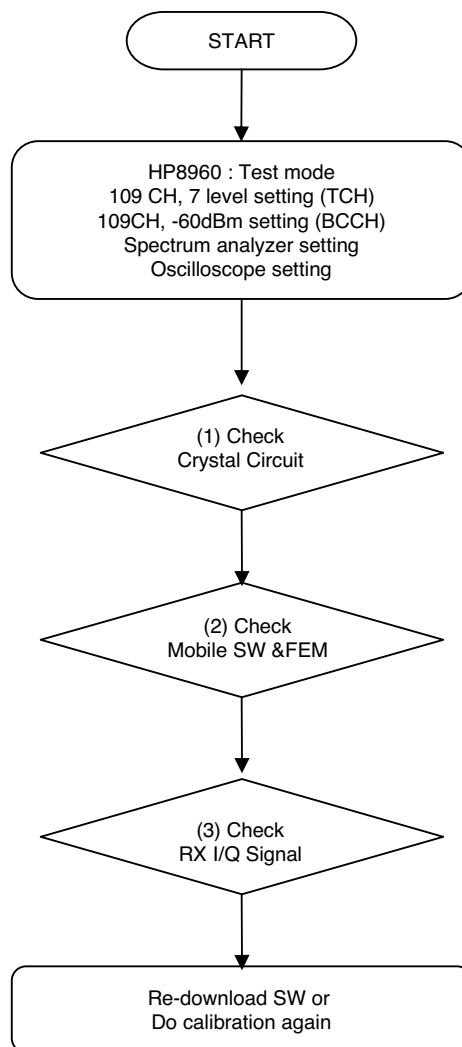
Figure 4.1

U502	Power Amp Module (SKY77318)
U503 (AD6548)	RF Main Chip (Transceiver)
X501	Crystal, 26MHz Clock
FL501	FEM

4. TROUBLE SHOOTING

4.2 RX Trouble

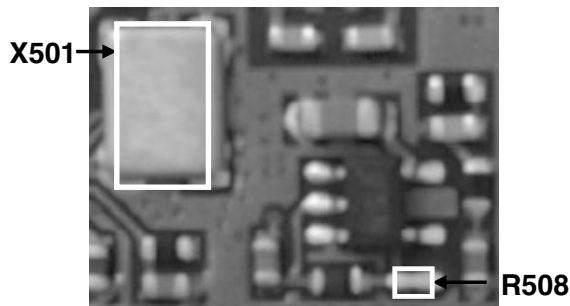
CHECKING FLOW



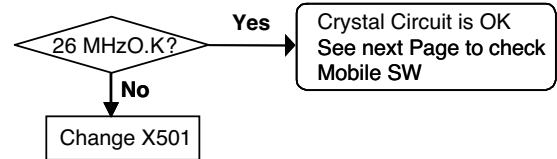
4. TROUBLE SHOOTING

(1) Checking Crystal Circuit

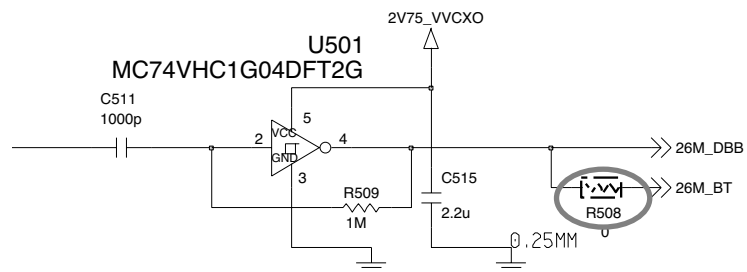
TEST POINT



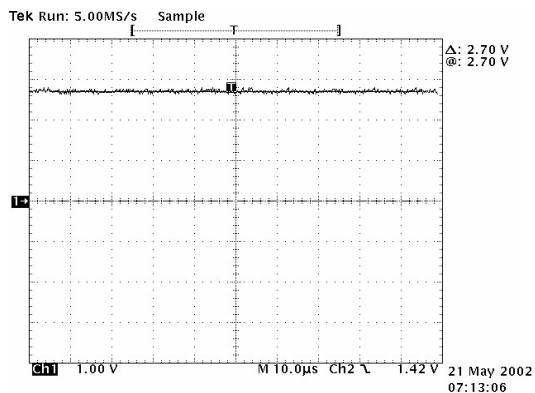
CHECKING FLOW



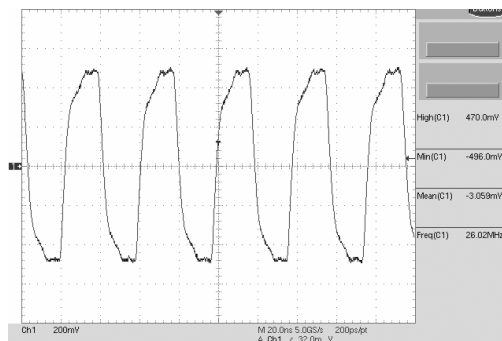
CIRCUIT



WAVEFORM



Graph 4.2.1(a)

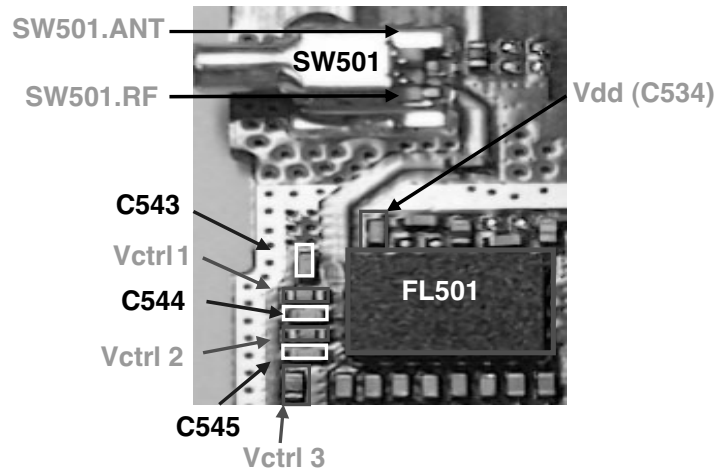


Graph 4.2.1(b)

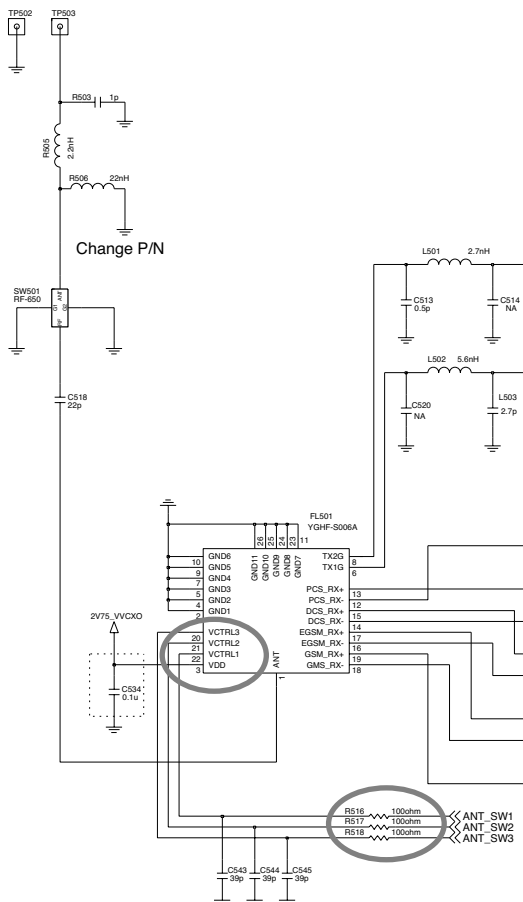
4. TROUBLE SHOOTING

(2) Checking Mobile SW & FEM

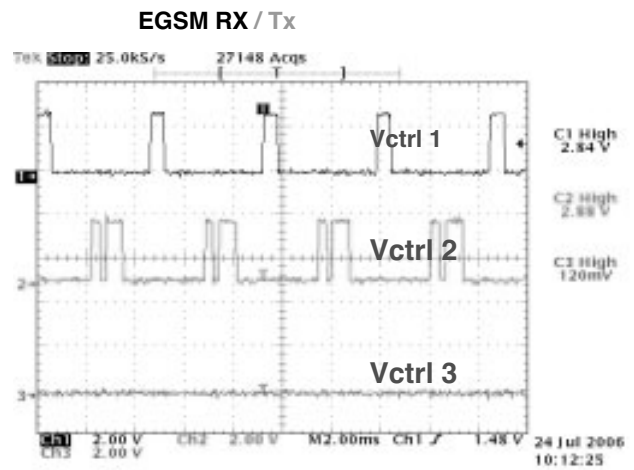
TEST POINT



CIRCUIT

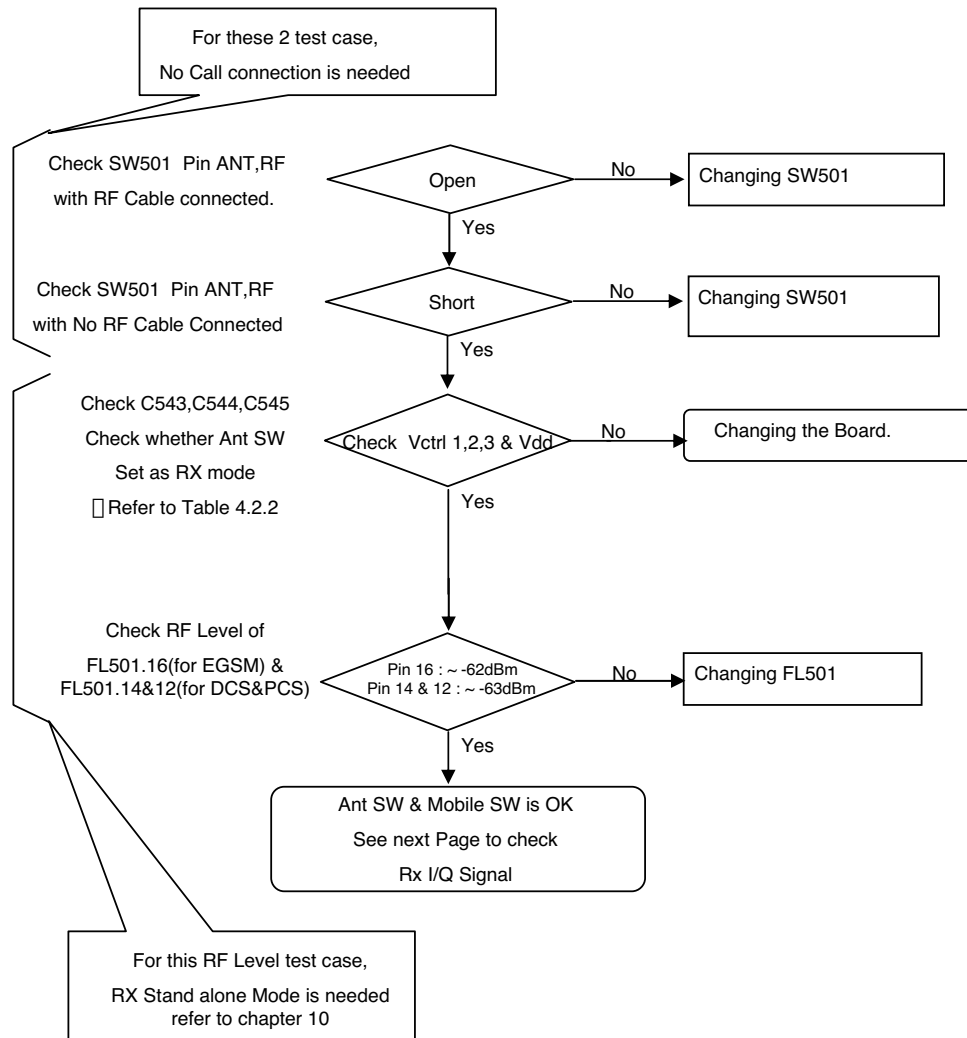


WAVEFORM



Graph 4.2.2 FEM Control Signal

CHECKING FLOW



Rx Mode	GSM	DCS	PCS
Vctrl1	Off	Off	Off
Vctrl2	On	Off	Off
Vctrl3	On	On	Off

Table 4.2.2

4. TROUBLE SHOOTING

(3) Checking RX I/Q

TEST POINT

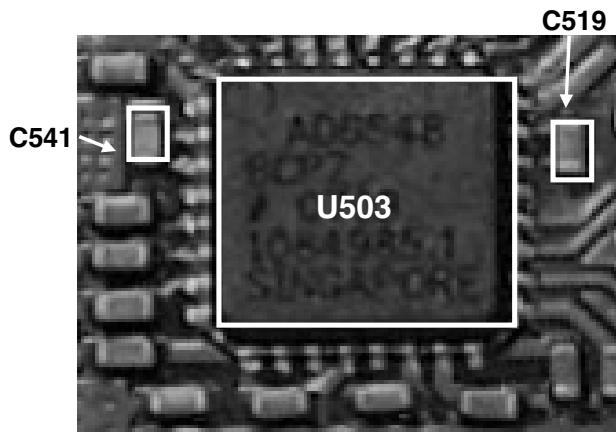
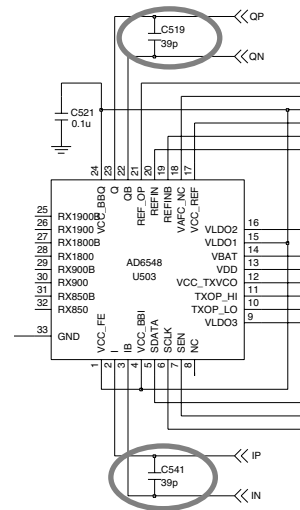
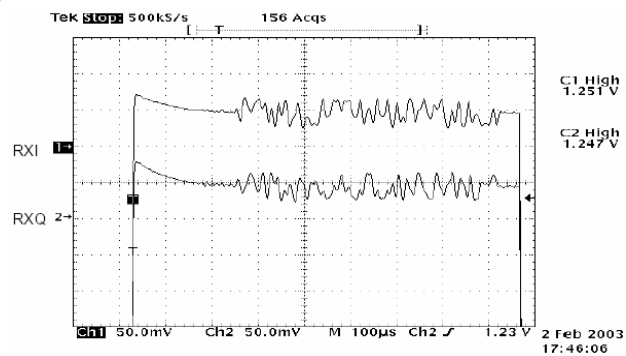


Figure 4.2.3

CIRCUIT

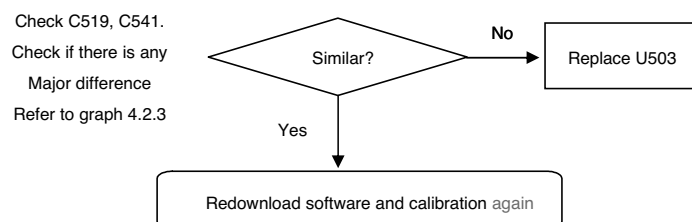


Waveform



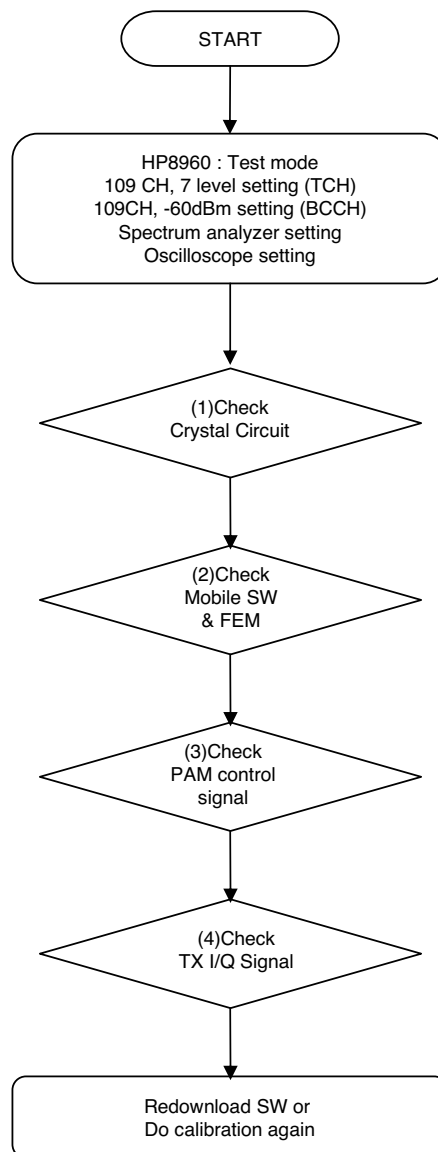
Graph 4.2.3

Checking Flow



4.3 TX Trouble

Checking Flow



4. TROUBLE SHOOTING

(1) Checking Crystal Circuit

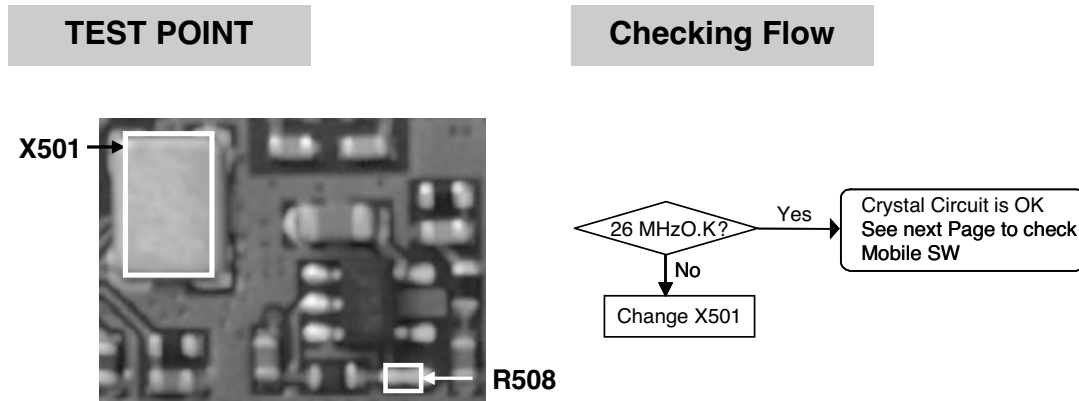
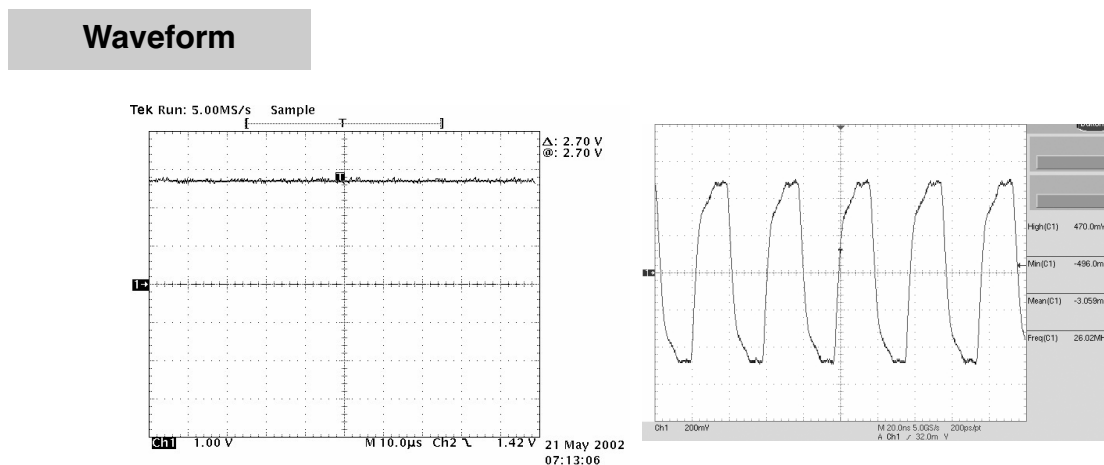
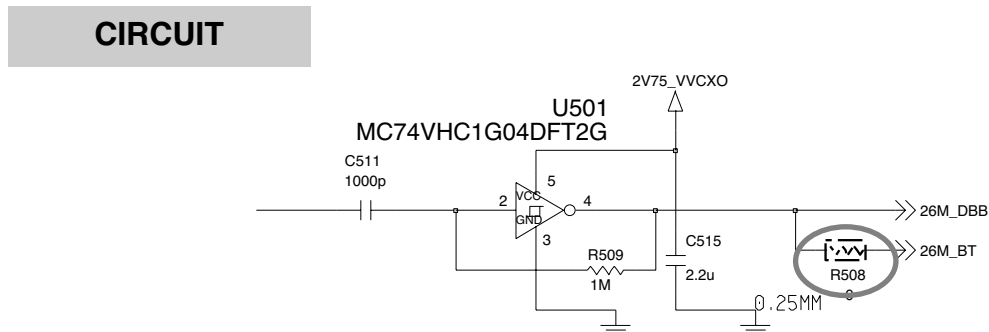


Figure 7



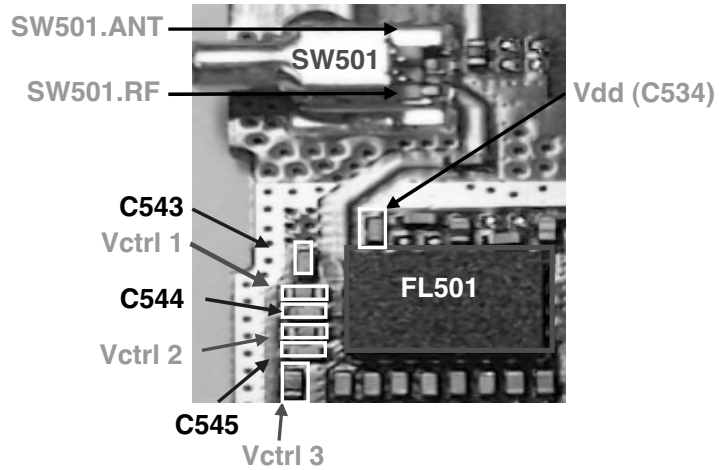
Graph 4.2.1(a)

Graph 4.2.1(b)

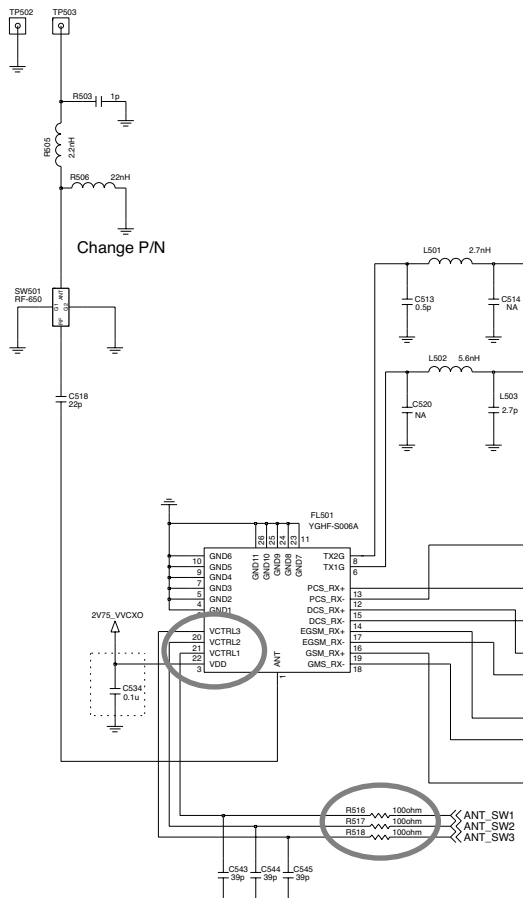
4. TROUBLE SHOOTING

(2) Checking Mobile SW & FEM

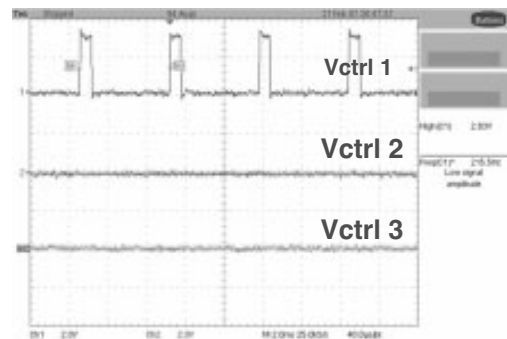
TEST POINT



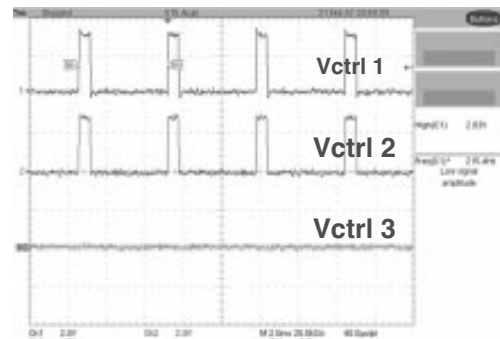
CIRCUIT



Waveform



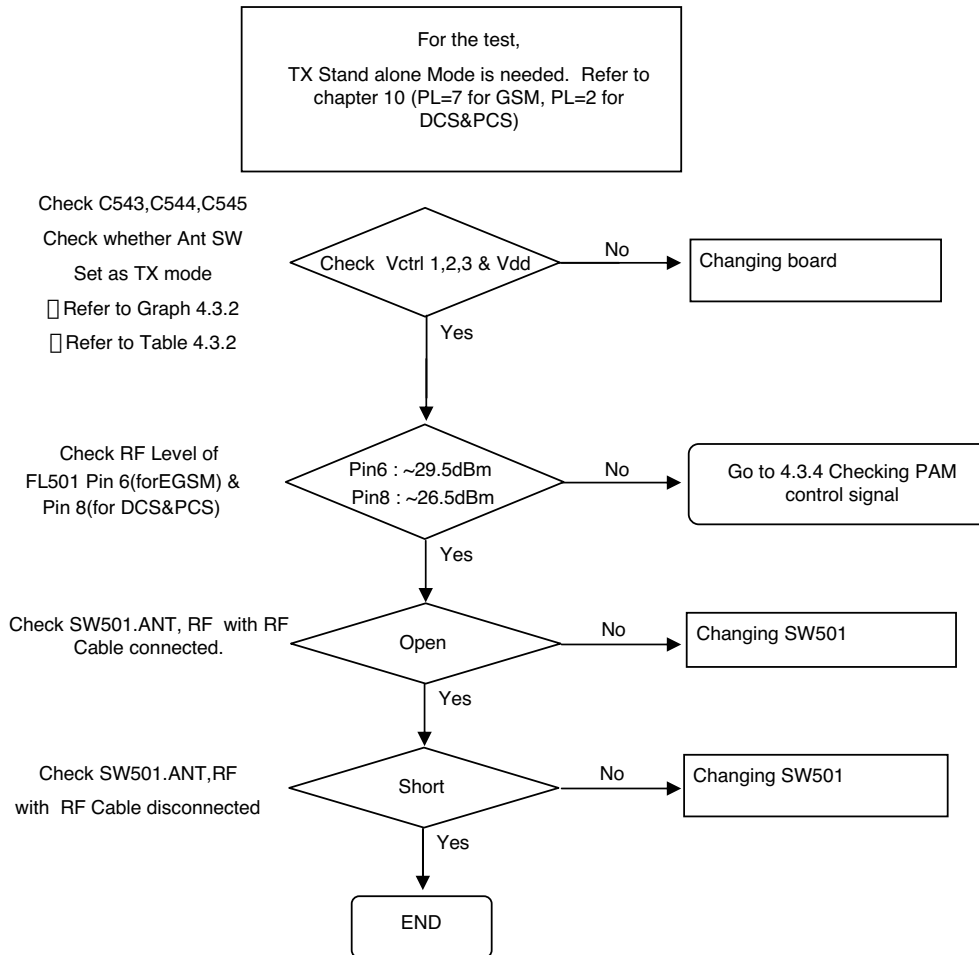
Graph 4.3.2(a) GSM Tx mode



Graph 4.3.2(b) DCS, PCS Tx mode

4. TROUBLE SHOOTING

Checking Flow



TX Mode	EGSM	DCS/PCSS
Vctrl 1	On	On
Vctrl 2	Off	On
Vctrl 3	Off	Off

Table 4.3.2

4. TROUBLE SHOOTING

(3) Checking PAM Control Signal

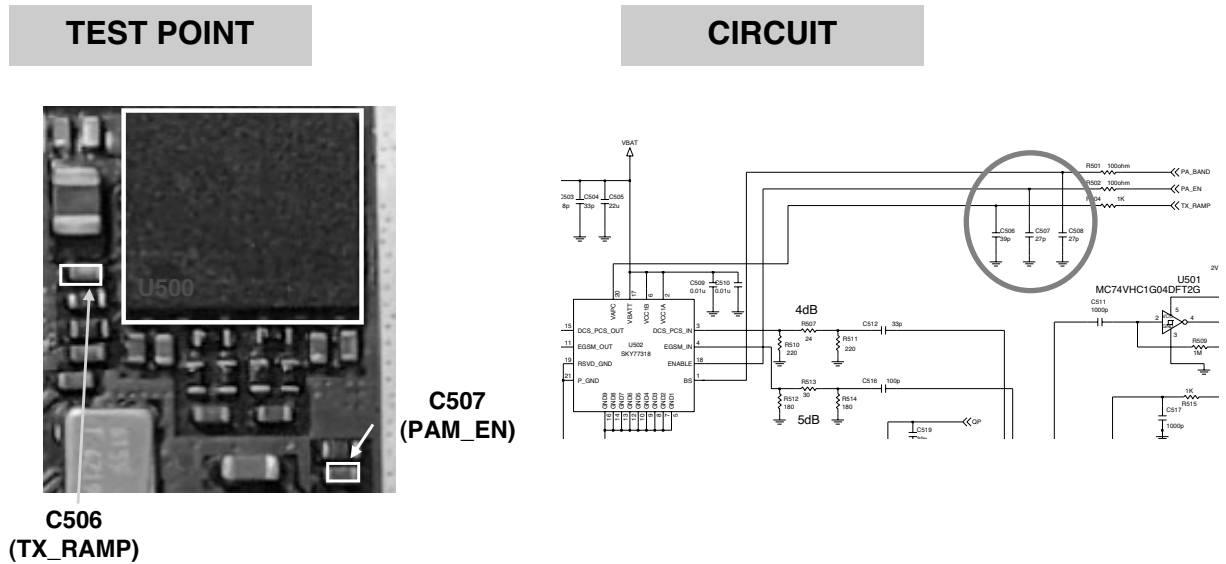
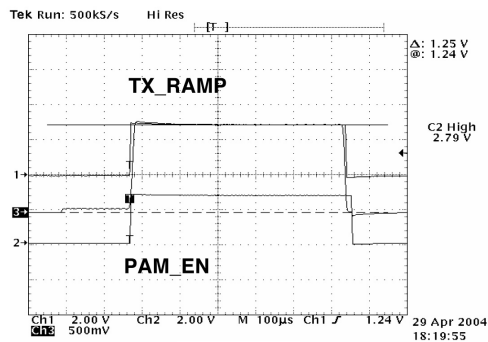


Figure 4.3.3

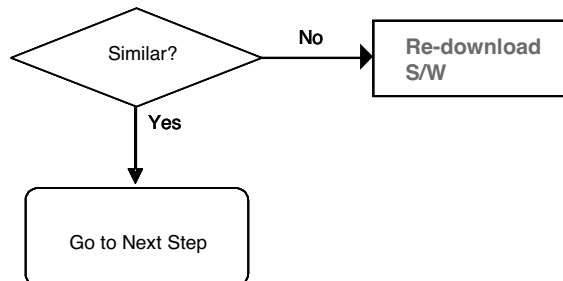
Waveform



Graph 4.3.3

Checking Flow

Check TX_RAMP and PAM_EN
Check if there is
Any Major Difference or not
Refer to Graph 4.3.3



4. TROUBLE SHOOTING

(4) Checking TX I/Q

TEST POINT

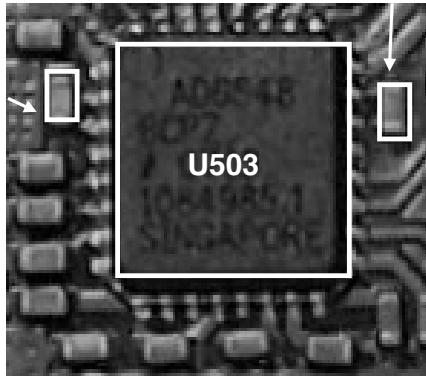
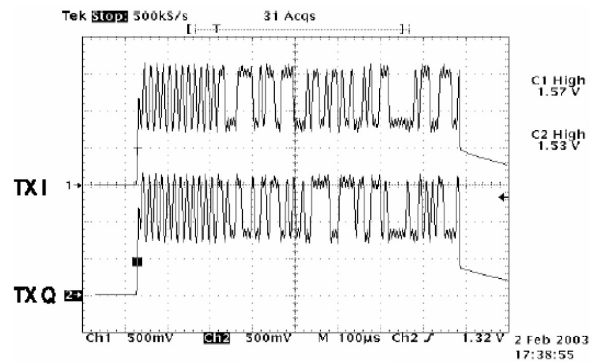


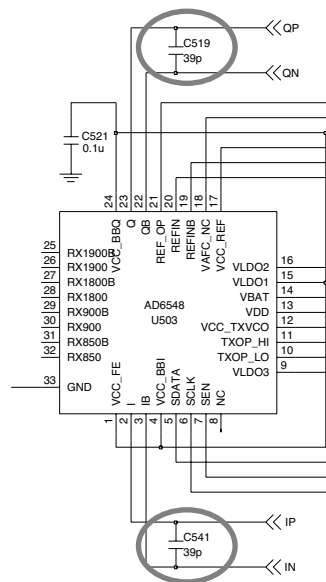
Figure 4.3.4

Waveform

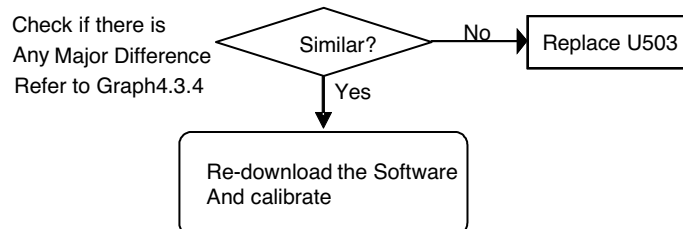


Graph 4.3.4

CIRCUIT



Checking Flow



4.4 Power On Trouble

TEST POINT

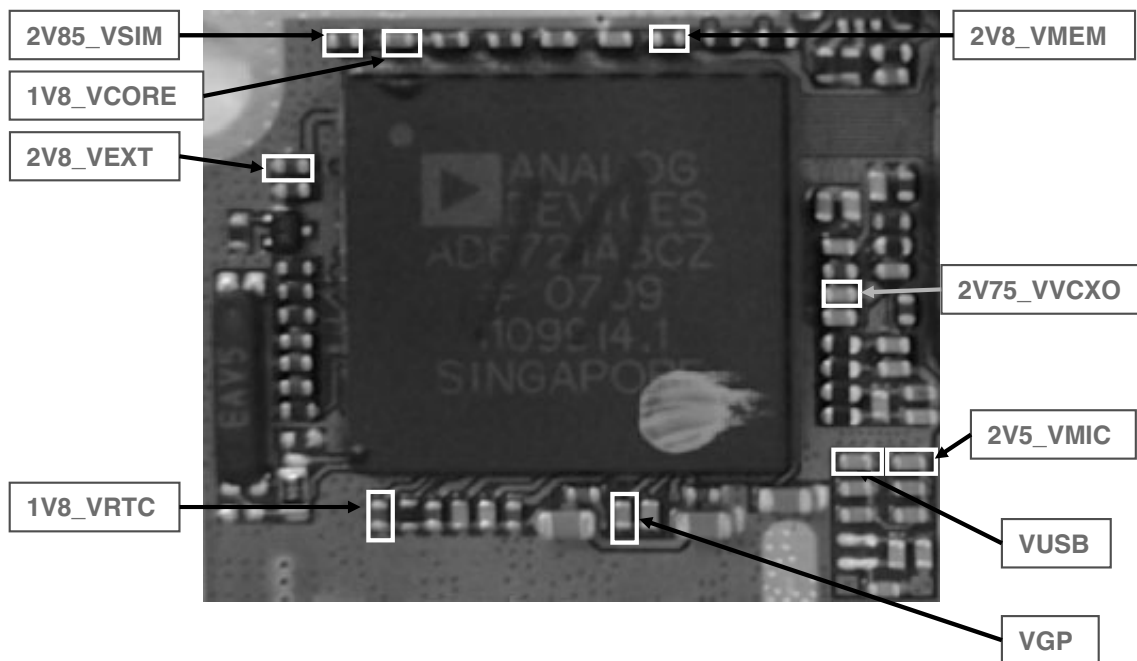
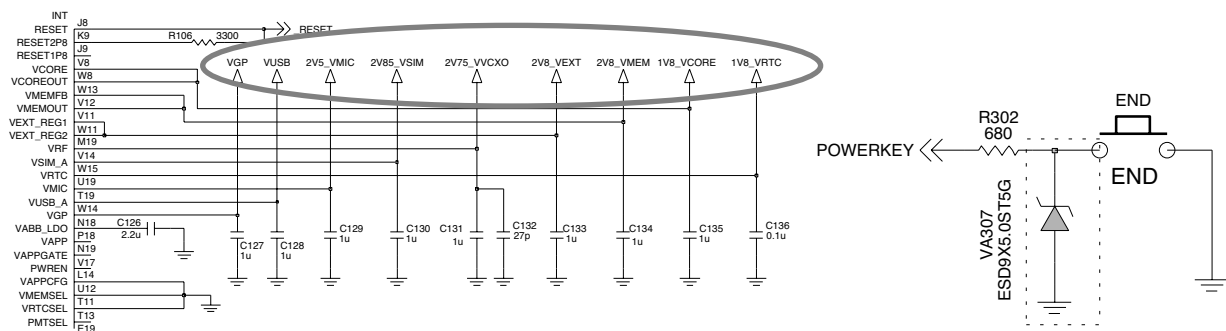


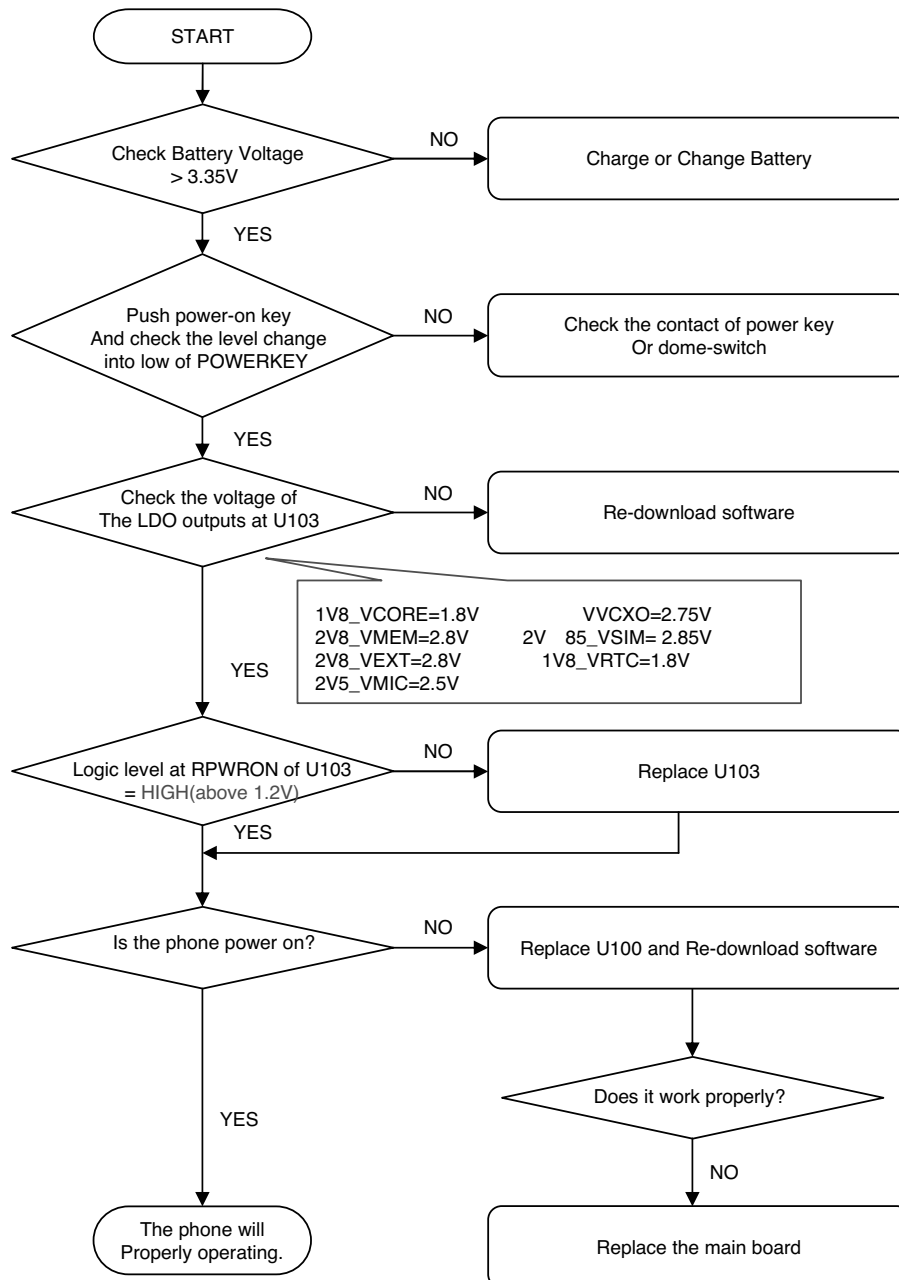
Figure 4.4

CIRCUIT



4. TROUBLE SHOOTING

Checking Flow



4.5 Charging Trouble

TEST POINT

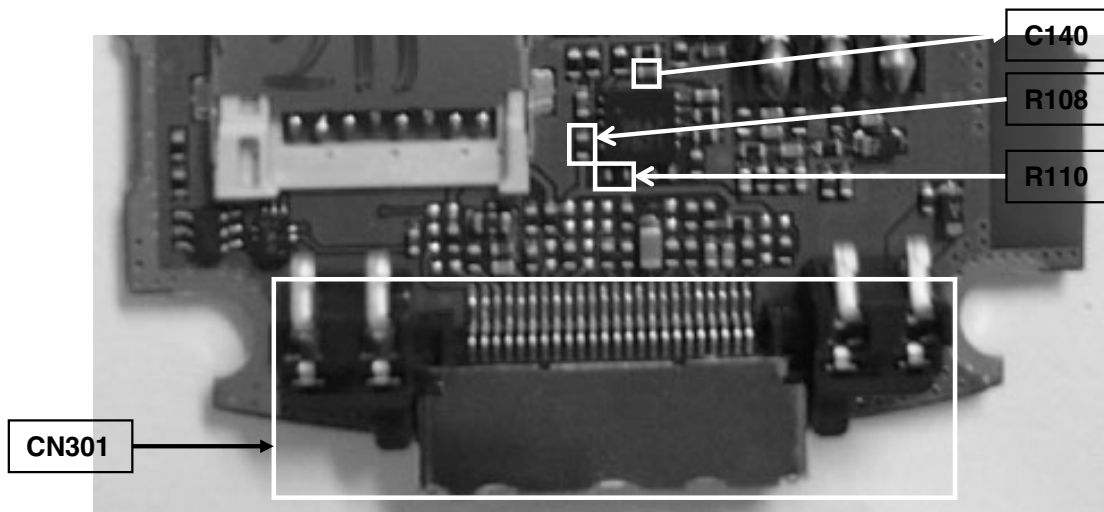
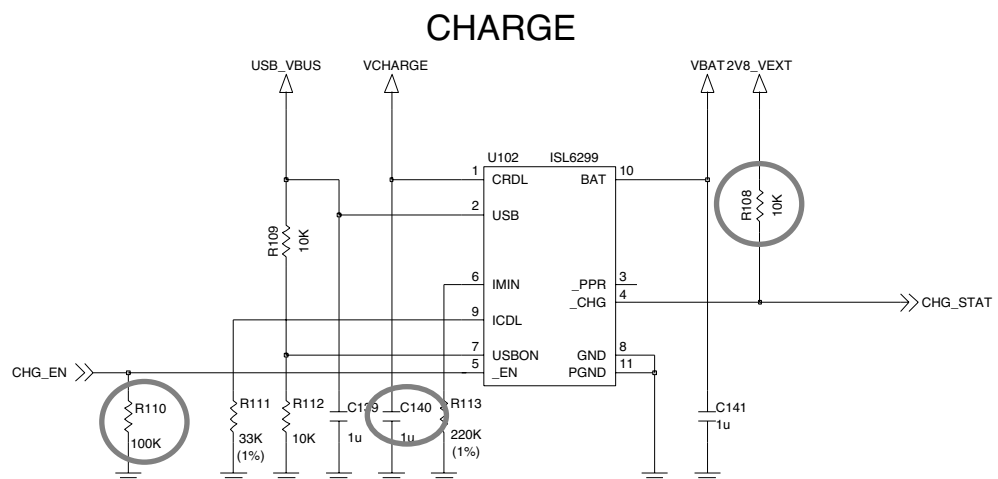


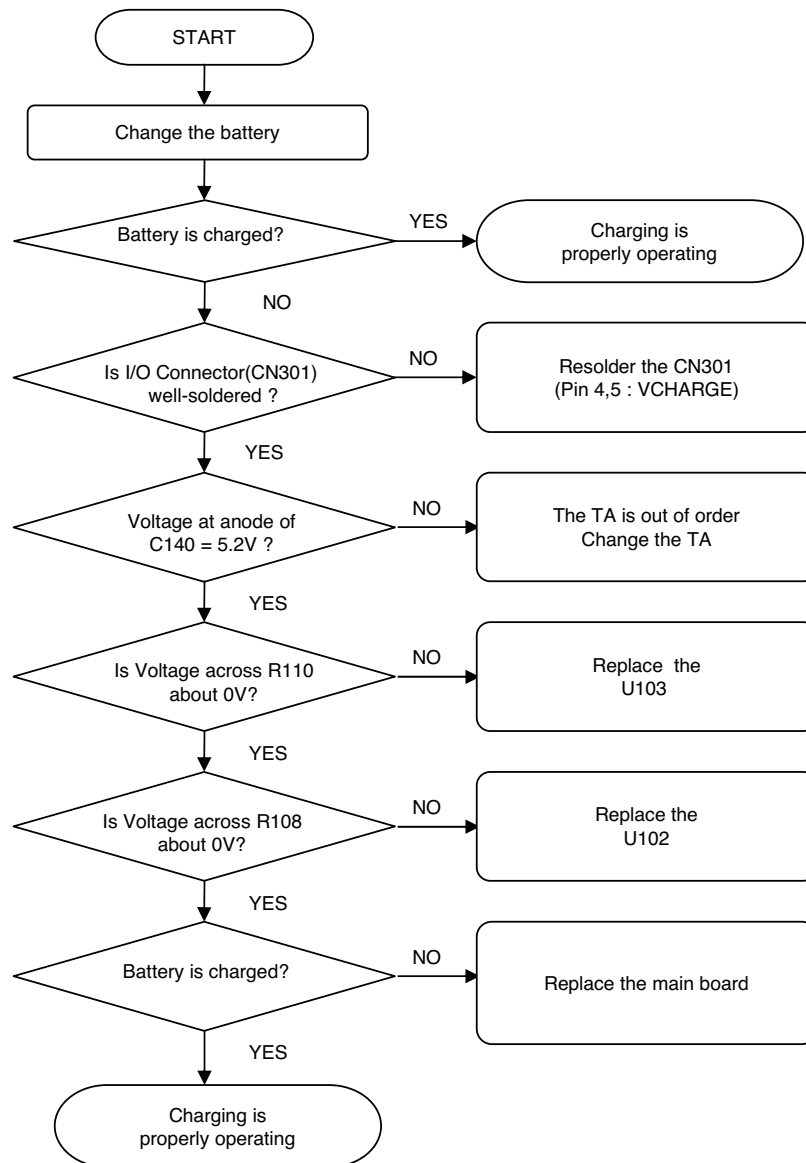
Figure 4.5

CIRCUIT



4. TROUBLE SHOOTING

Checking Flow



4.6 Vibrator Trouble

TEST POINT

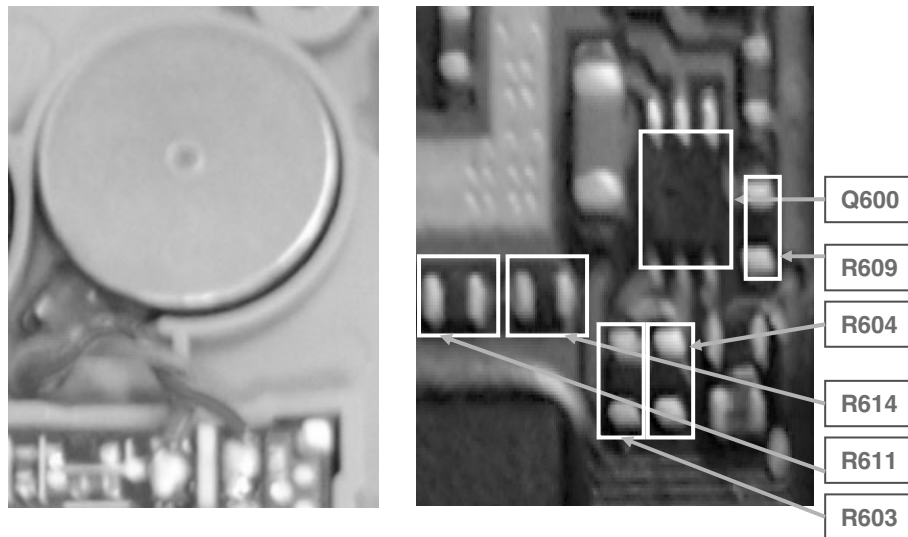
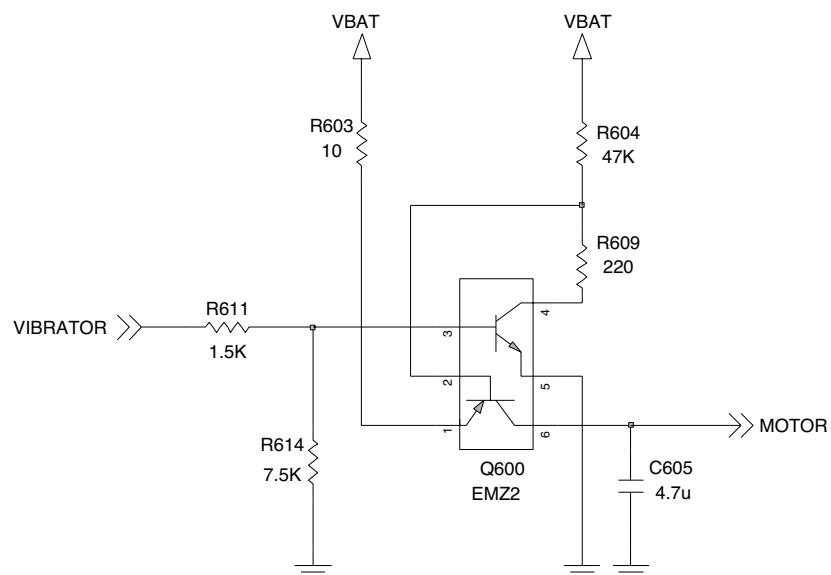


Figure 4.6

CIRCUIT

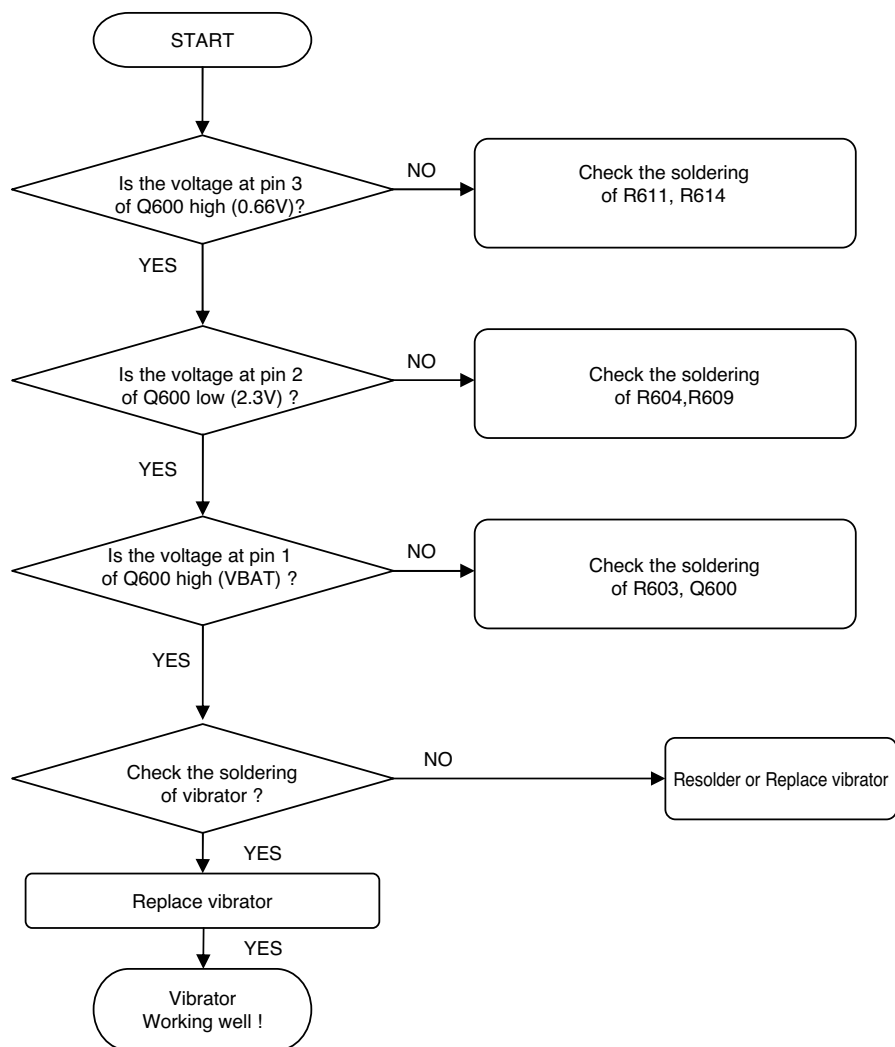
VIBRATOR



4. TROUBLE SHOOTING

Checking Flow

SETTING : Enter the engineering mode, and set vibrator on at vibration of BB test menu



4.7 LCD Trouble

TEST POINT

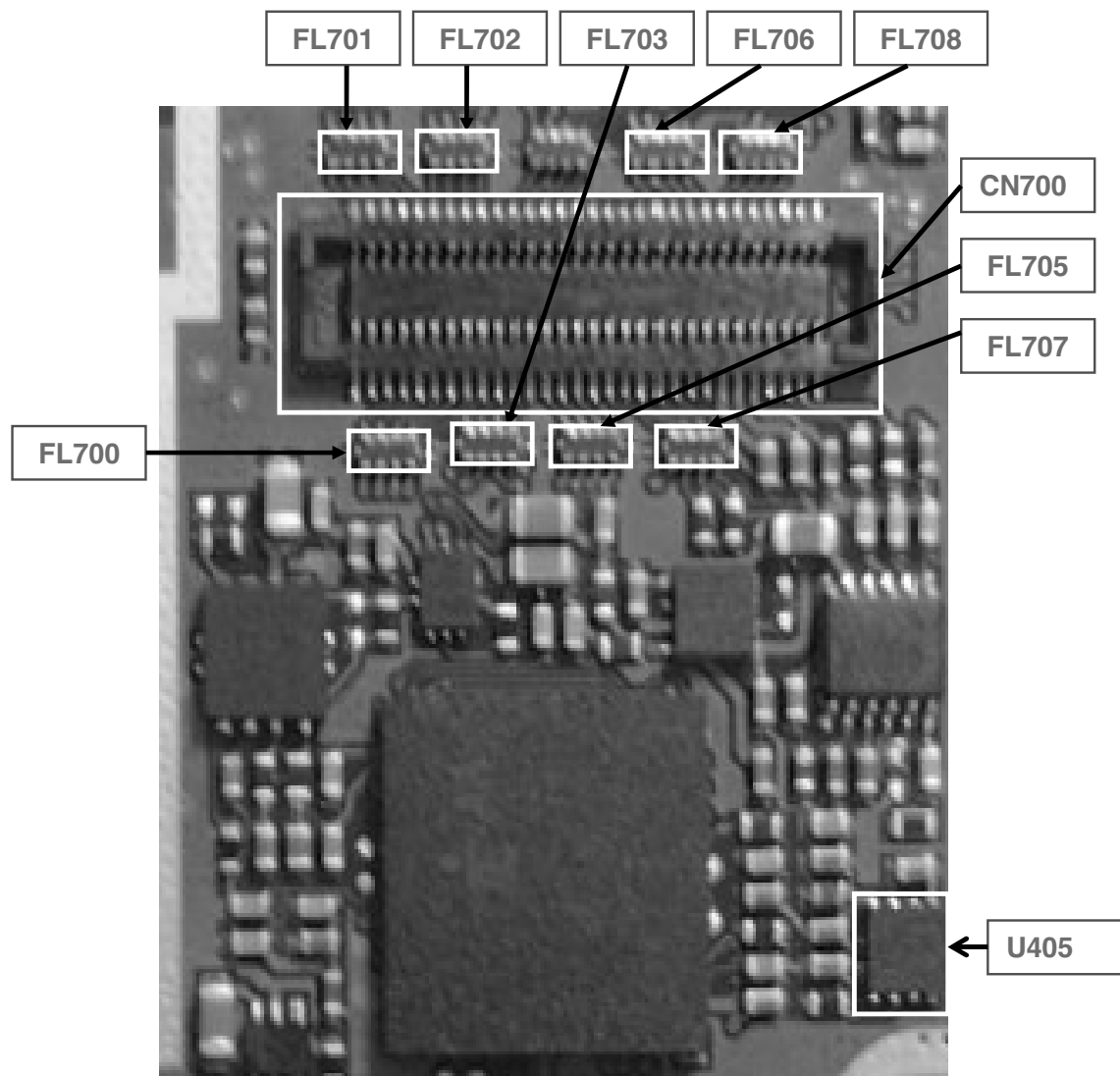
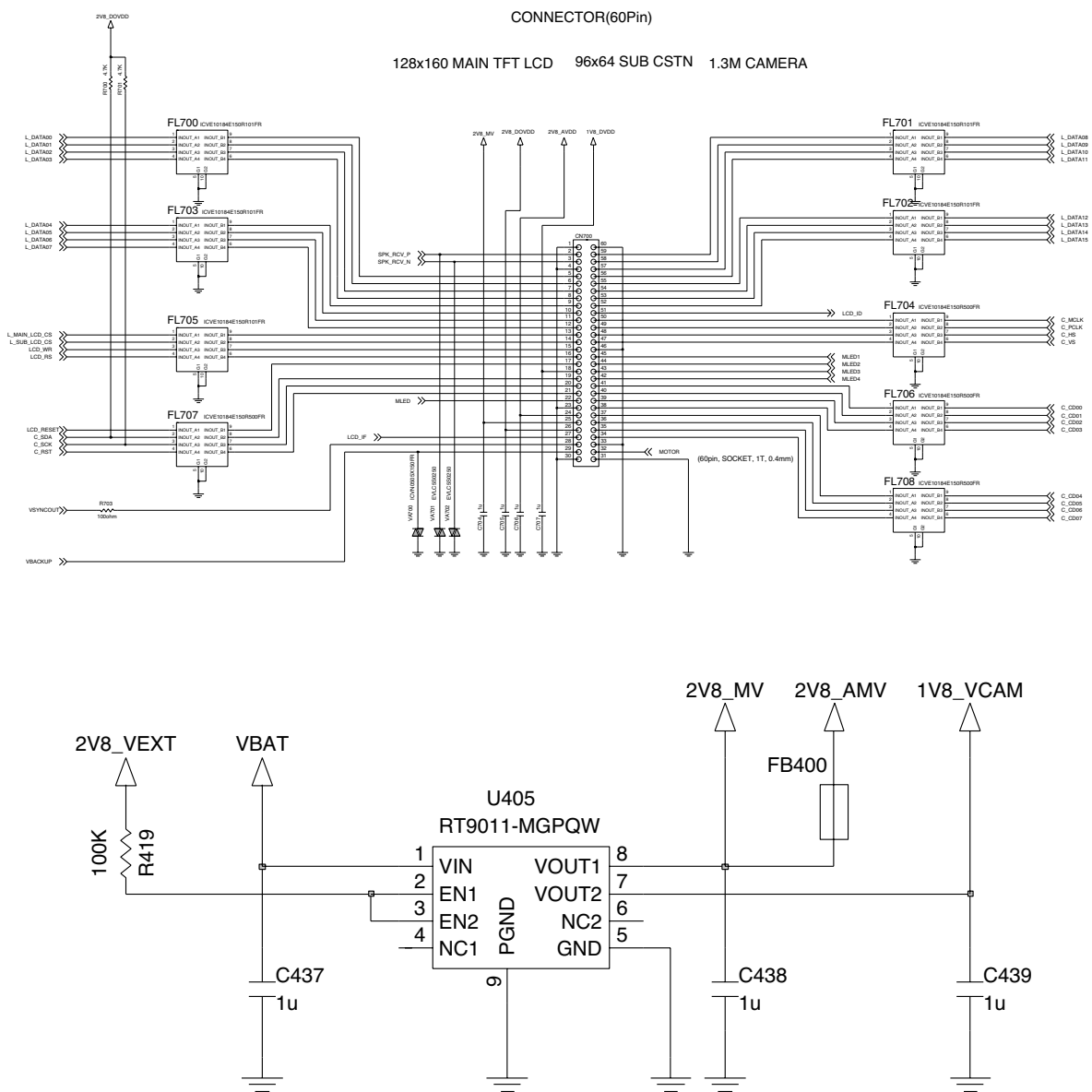


Figure 4.7

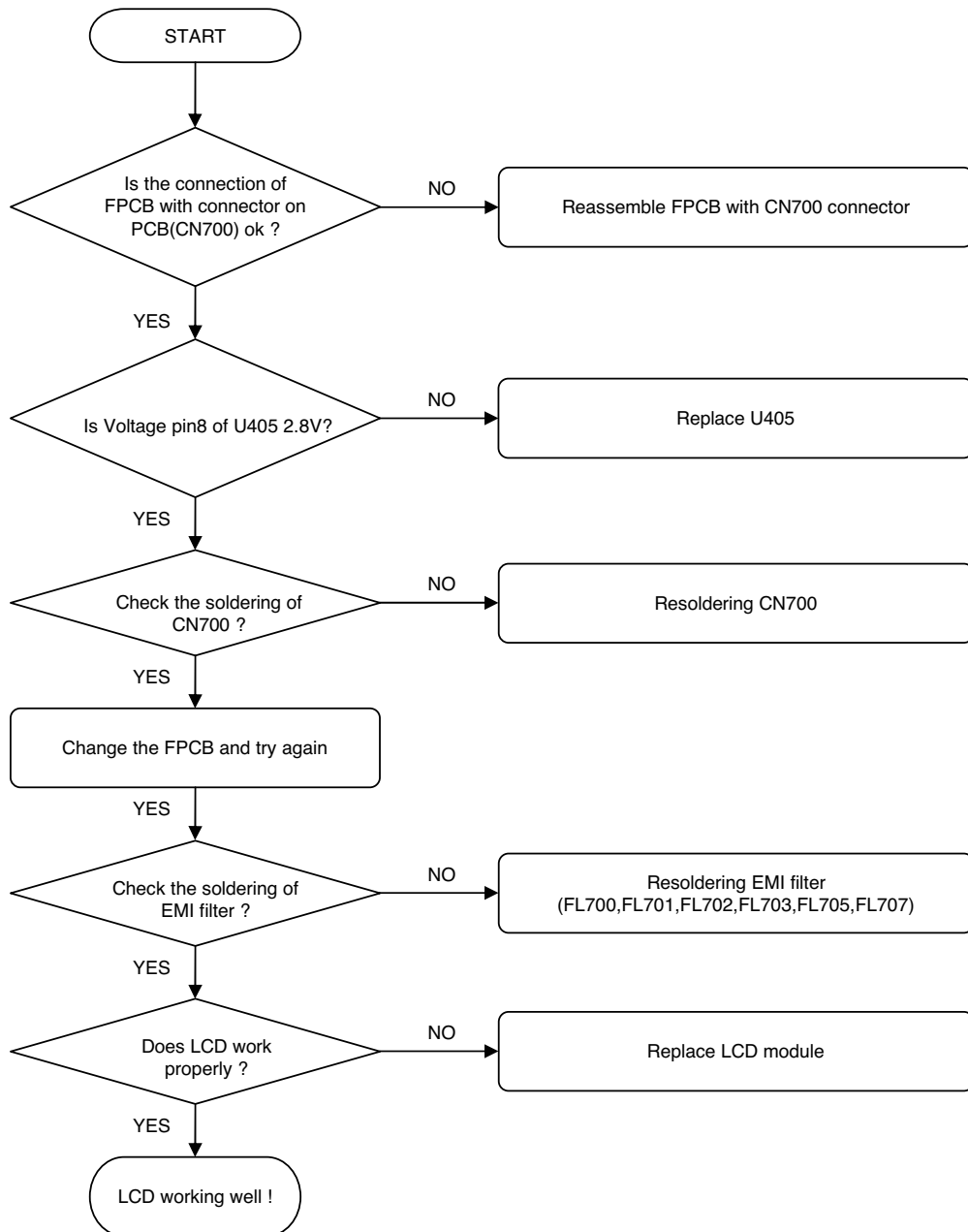
4. TROUBLE SHOOTING

LCD Trouble

CIRCUIT



Checking Flow



4. TROUBLE SHOOTING

4.8 Camera Trouble

TEST POINT

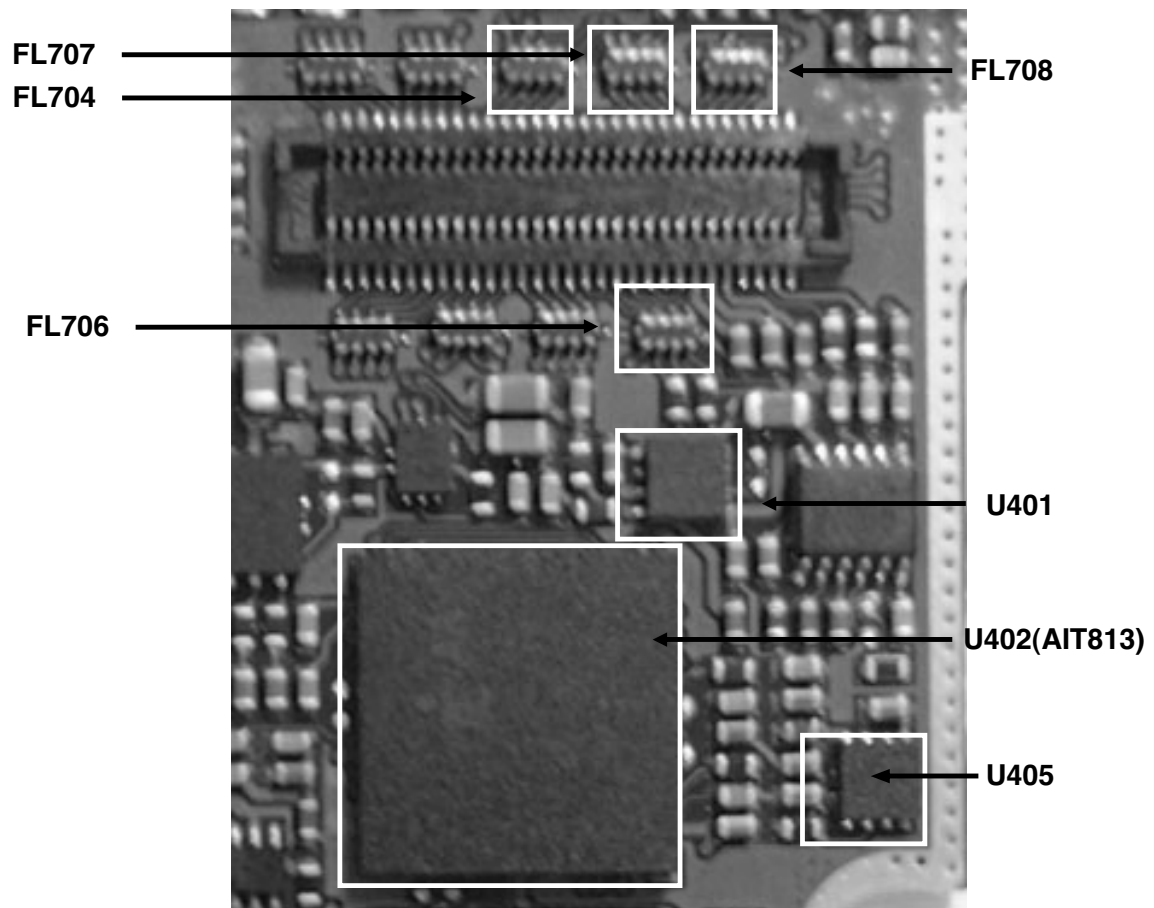


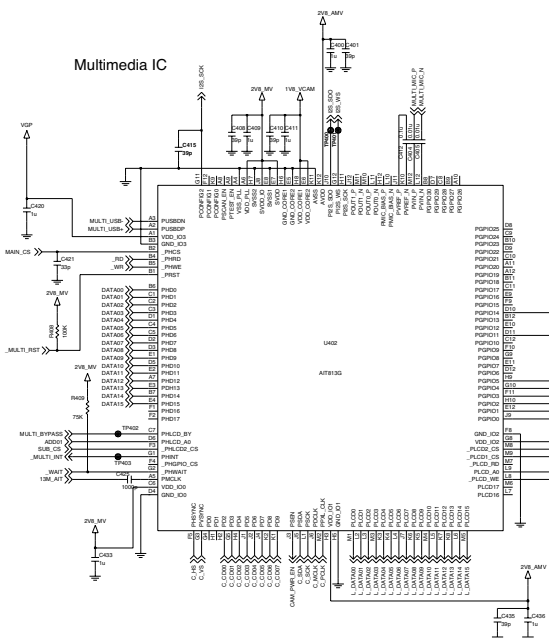
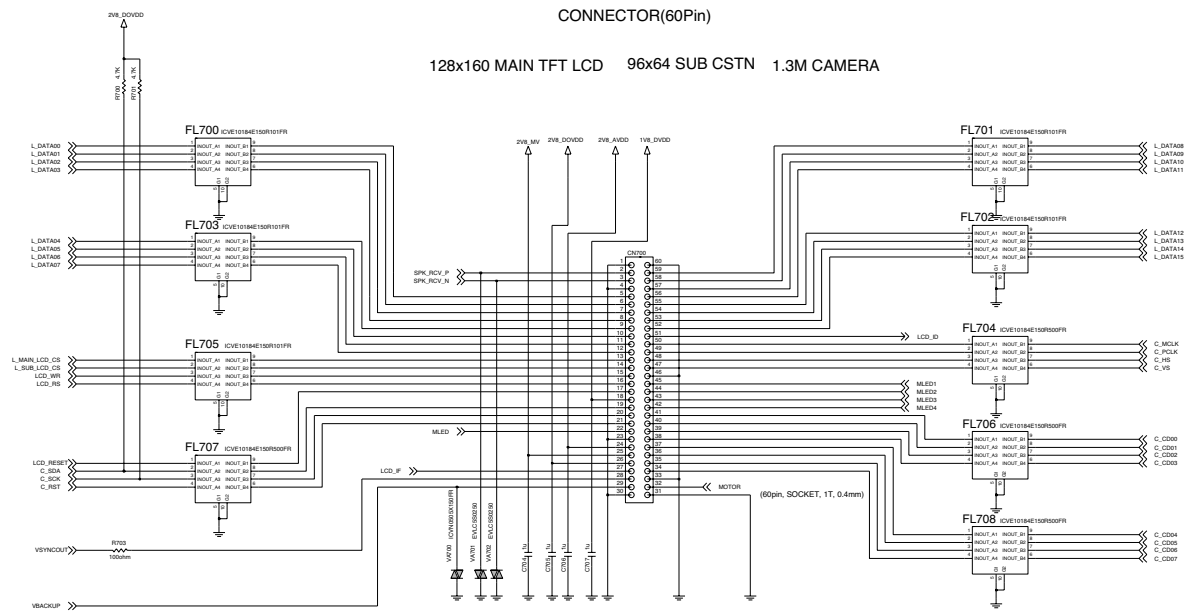
Figure 4.8

Figure 17

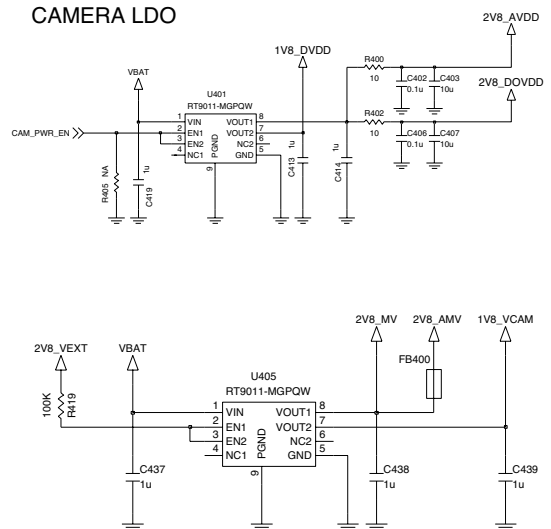
4. TROUBLE SHOOTING

Camera Trouble

CIRCUIT

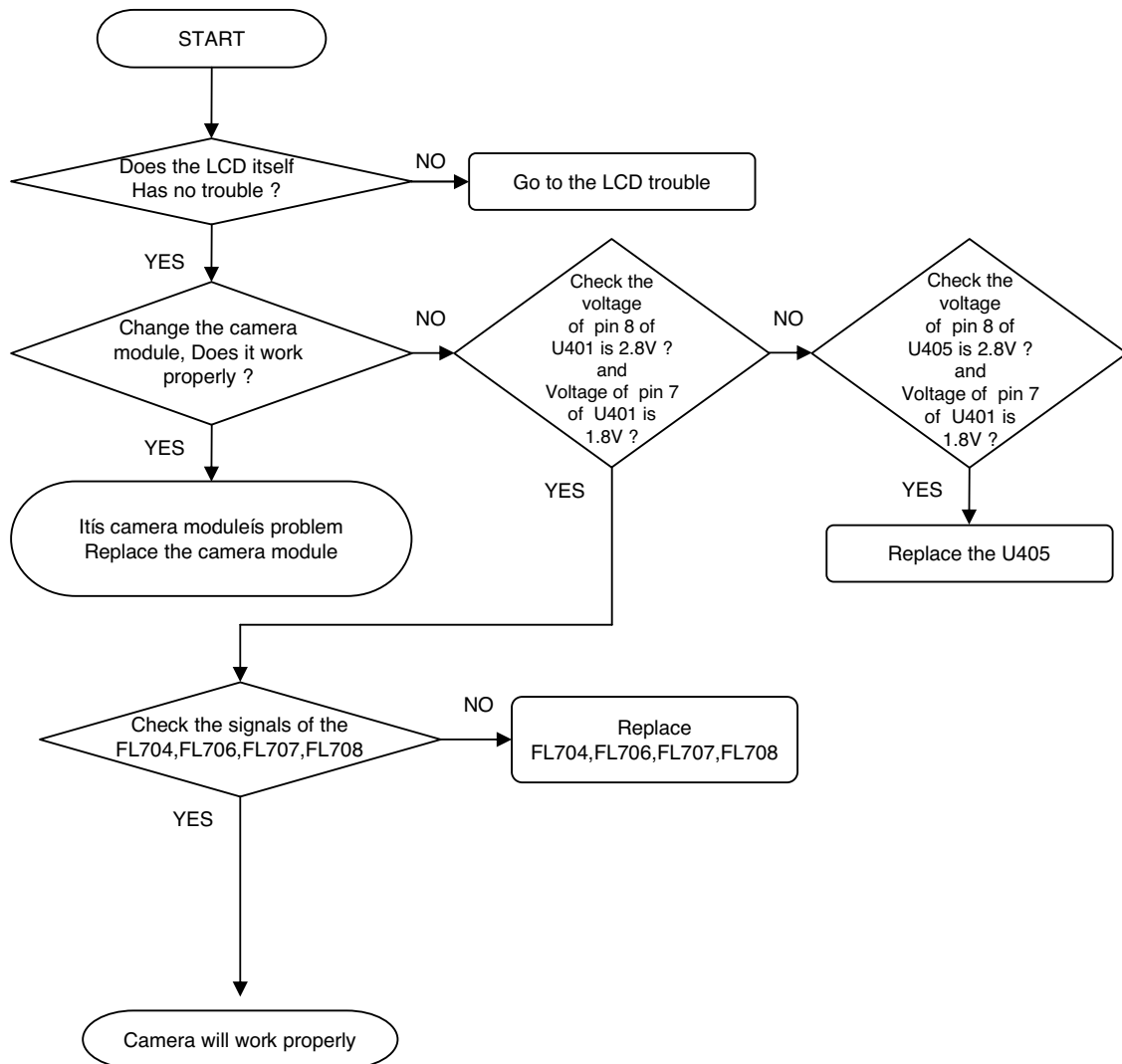


CAMERA LDO



4. TROUBLE SHOOTING

Checking Flow



4.9 Speaker Trouble

TEST POINT

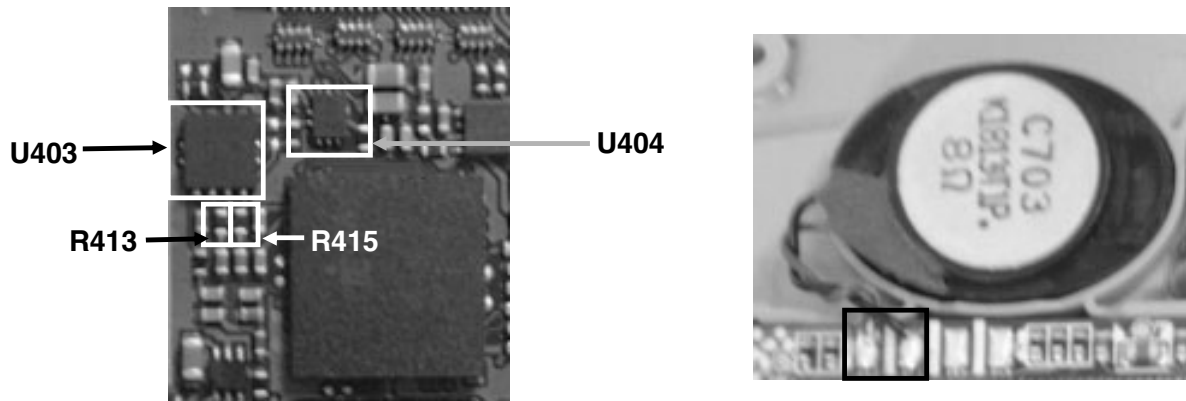
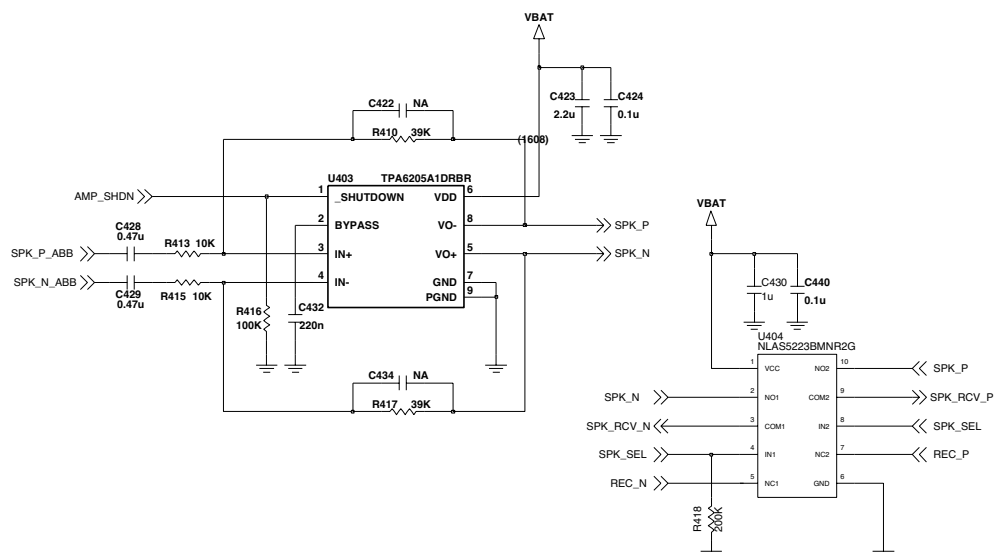


Figure 4.9

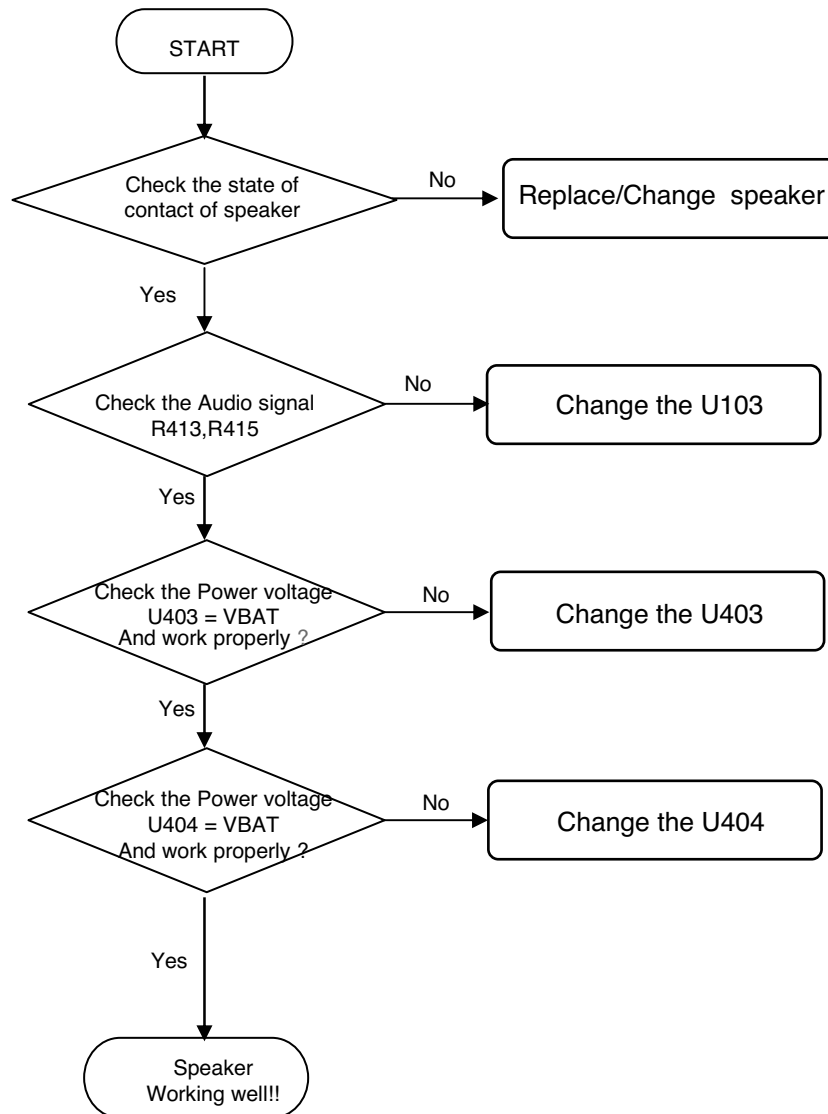
CIRCUIT DIAGRAM

ACOUSTIC & MIDI



4. TROUBLE SHOOTING

Checking Flow



4.10 SIM Card Interface Trouble

TEST POINT

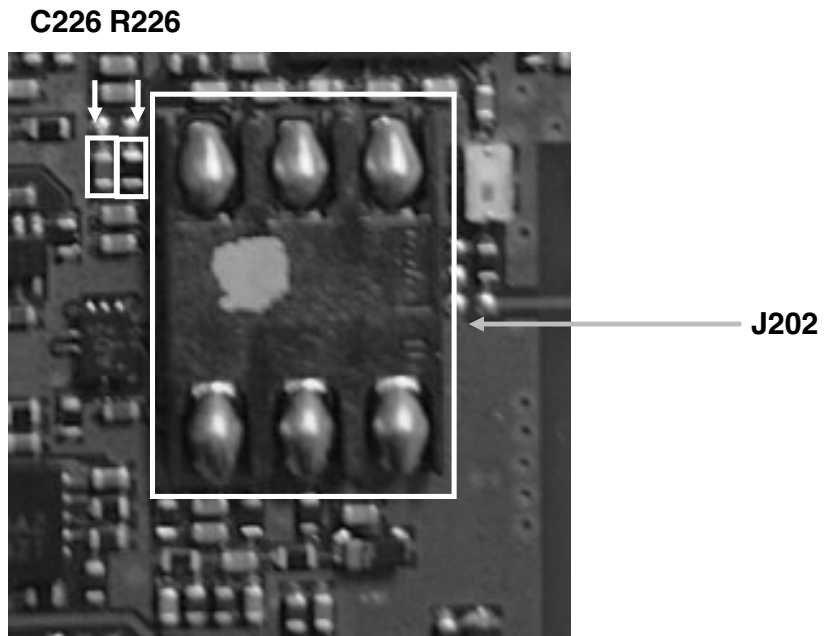
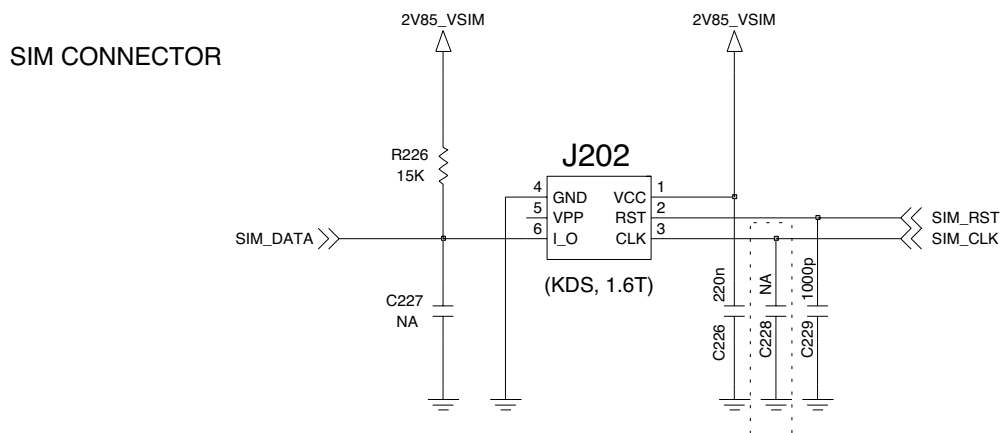


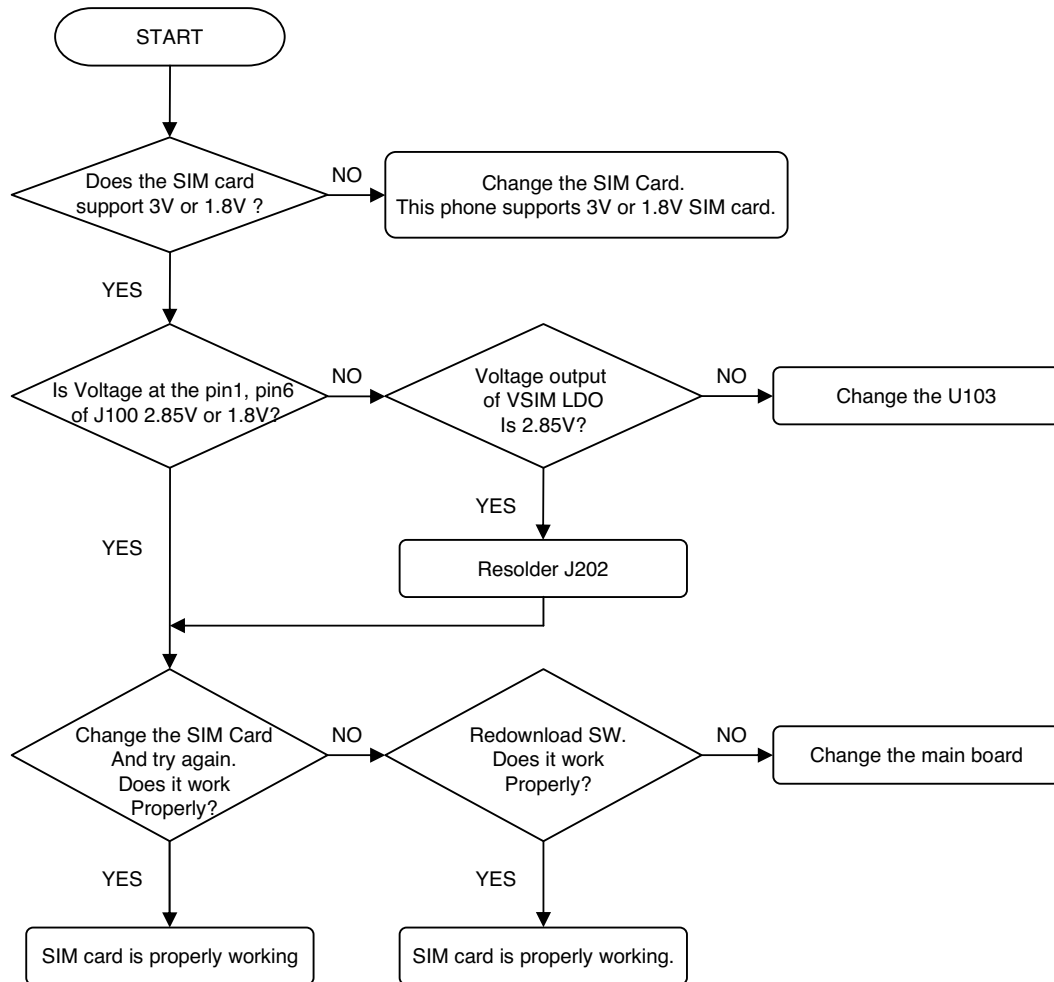
Figure 4.10

CIRCUIT DIAGRAM



4. TROUBLE SHOOTING

Checking Flow



4.11 Earphone Trouble

TEST POINT

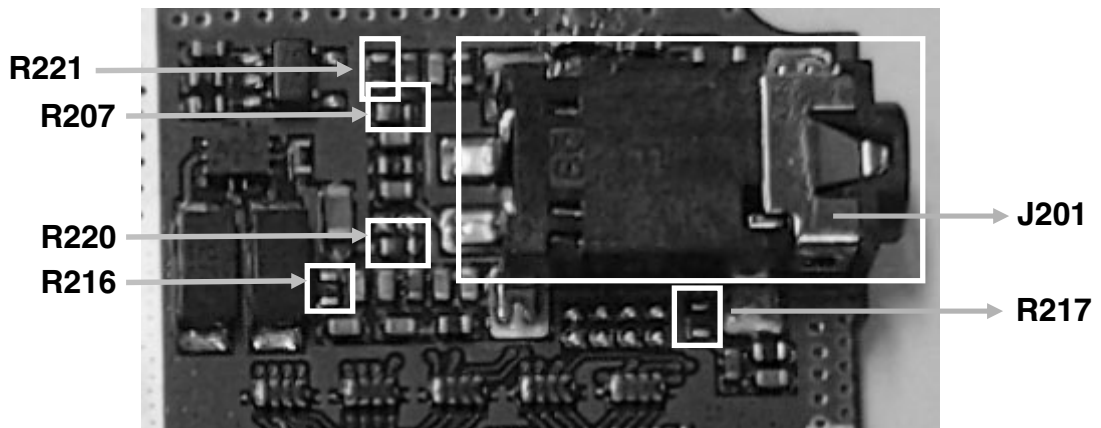
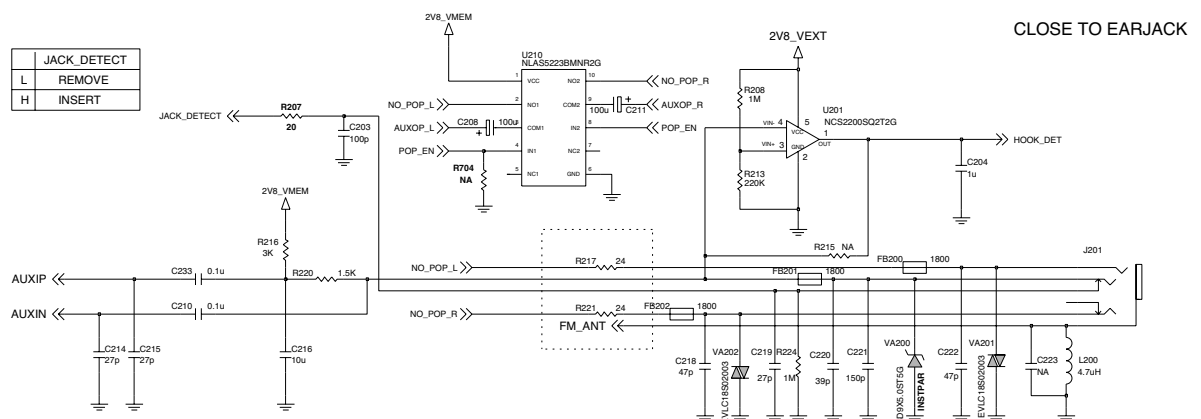


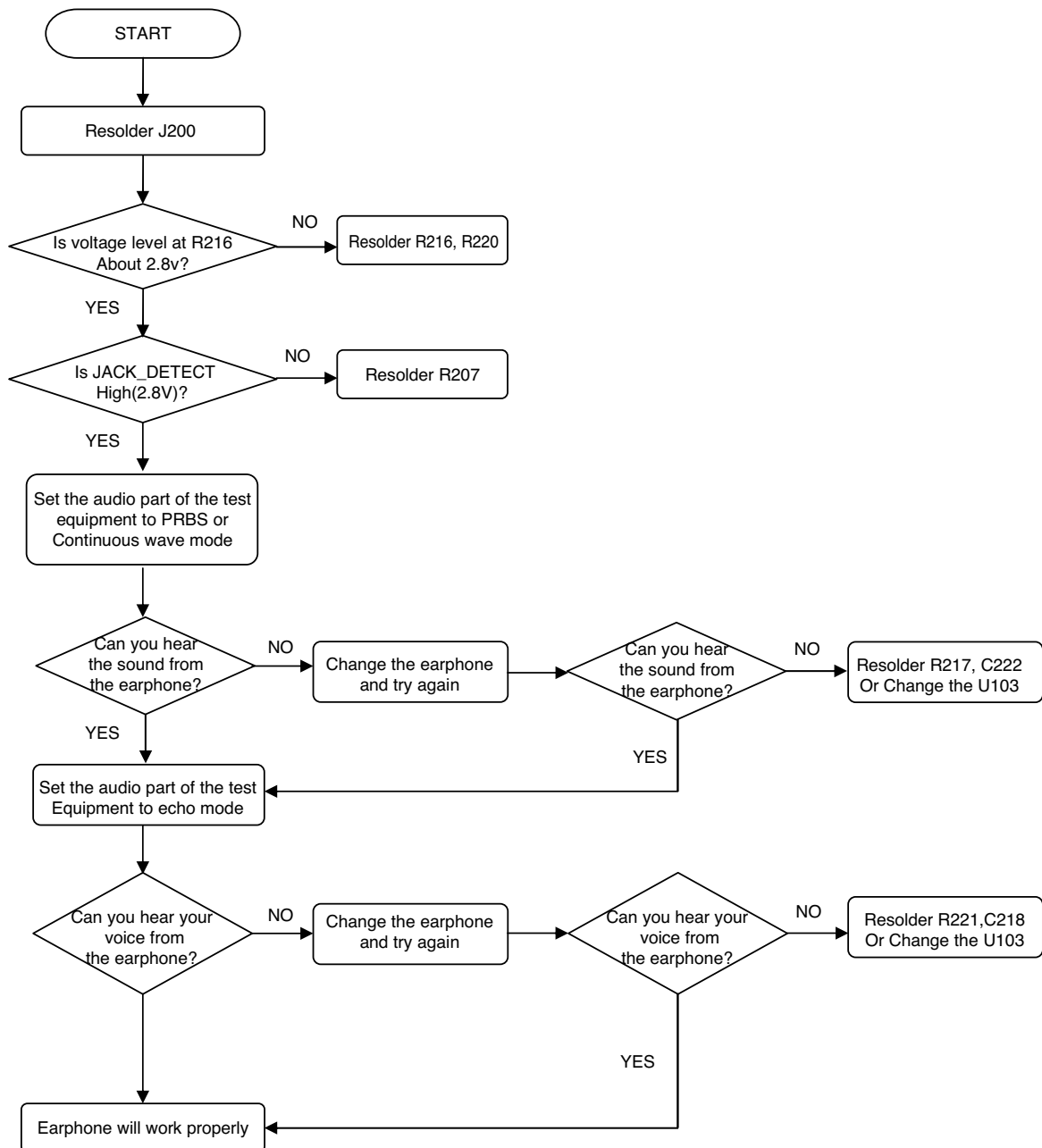
Figure 4.11

CIRCUIT DIAGRAM



4. TROUBLE SHOOTING

Checking Flow



4.12 KEY backlight Trouble

TEST POINT

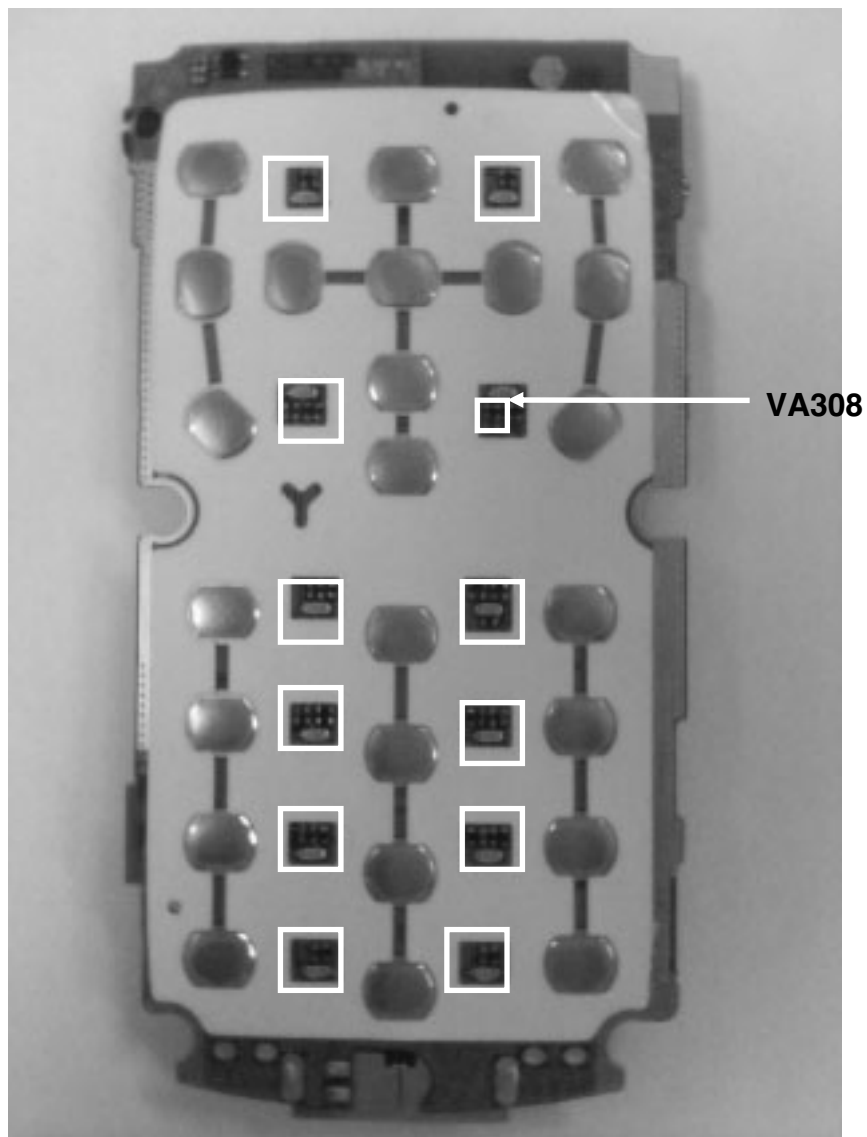
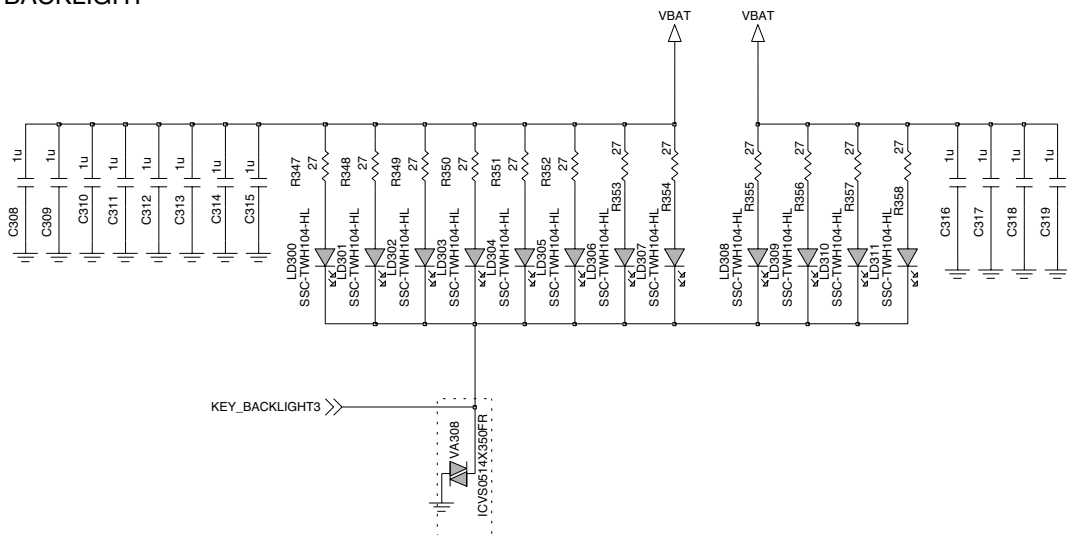


Figure 4.12

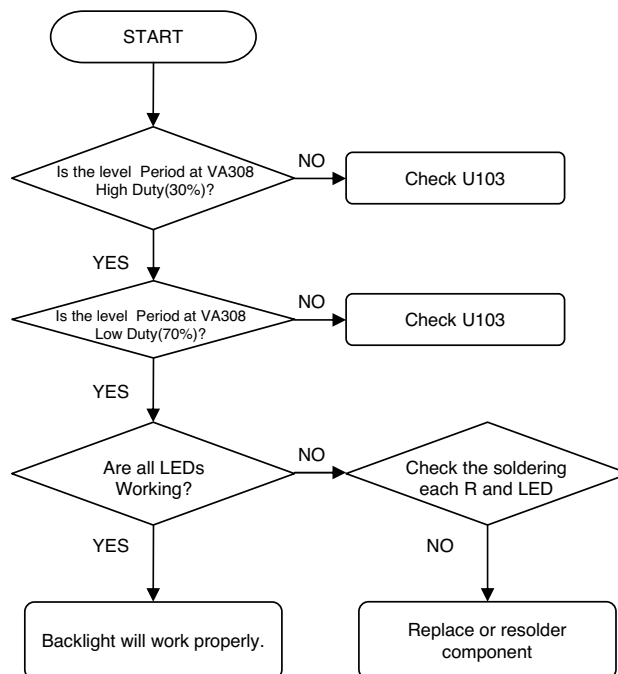
4. TROUBLE SHOOTING

CIRCUIT

KEY BACKLIGHT



Checking Flow



4.13 Receiver Trouble

TEST POINT

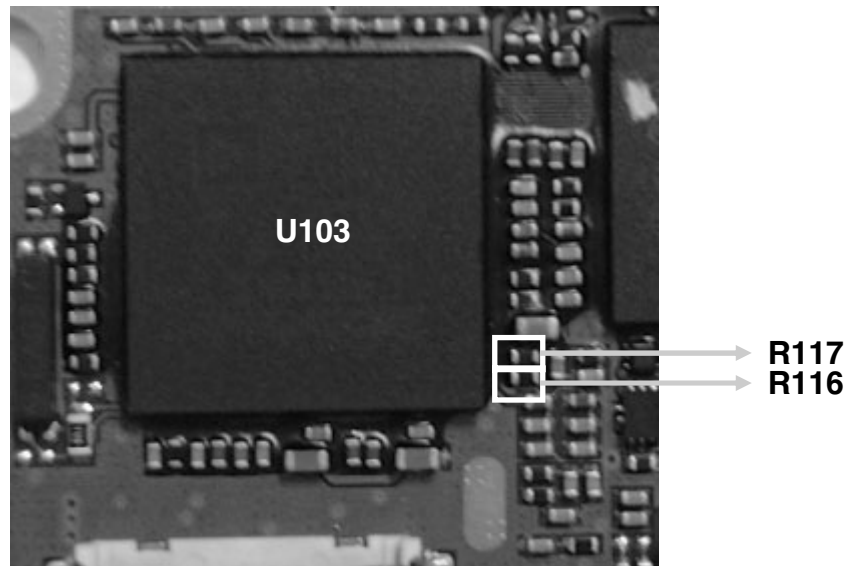
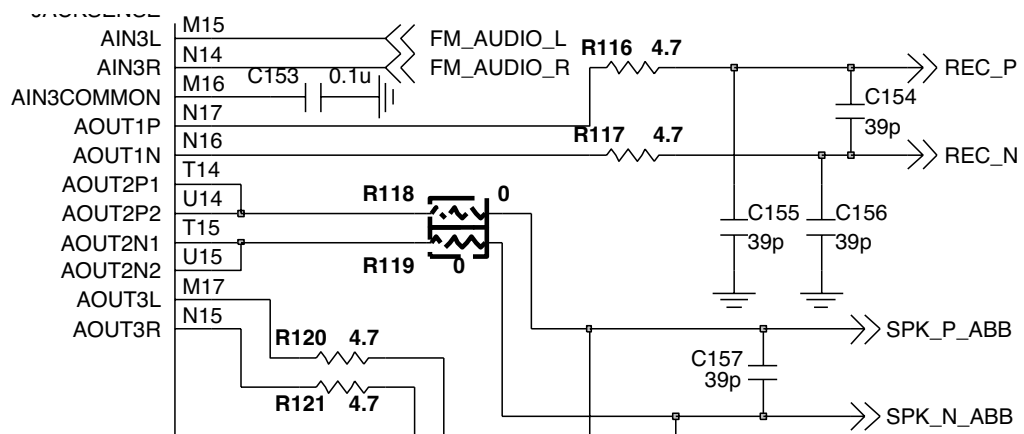


Figure 4.13

CIRCUIT DIAGRAM

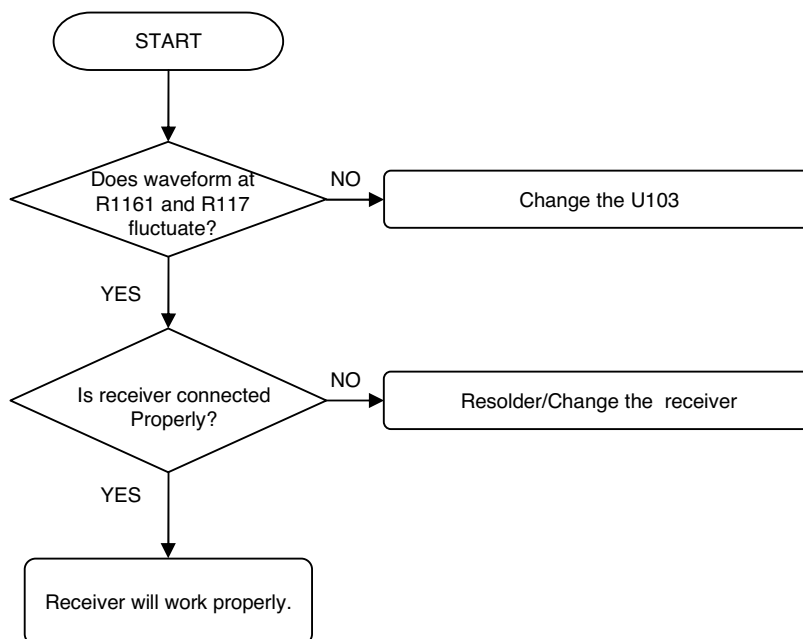


4. TROUBLE SHOOTING

Checking Flow

SETTING : After initialize Agilent 8960, Test GSM850, DCS mode

Set the property of audio as PRBS or continuous wave. Set the receiving volume of mobile as Max.



4.14 Microphone Trouble

TEST POINT

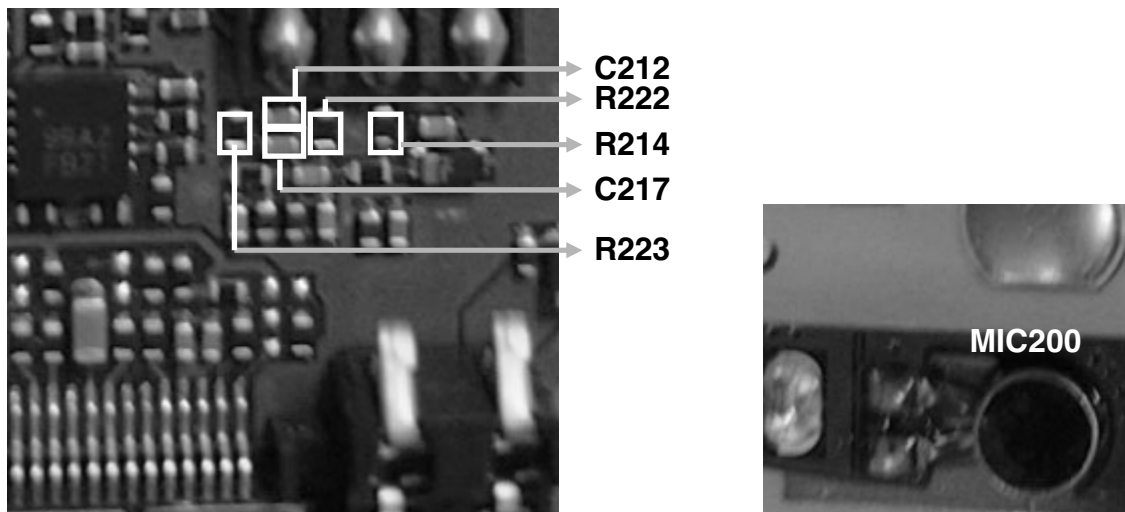
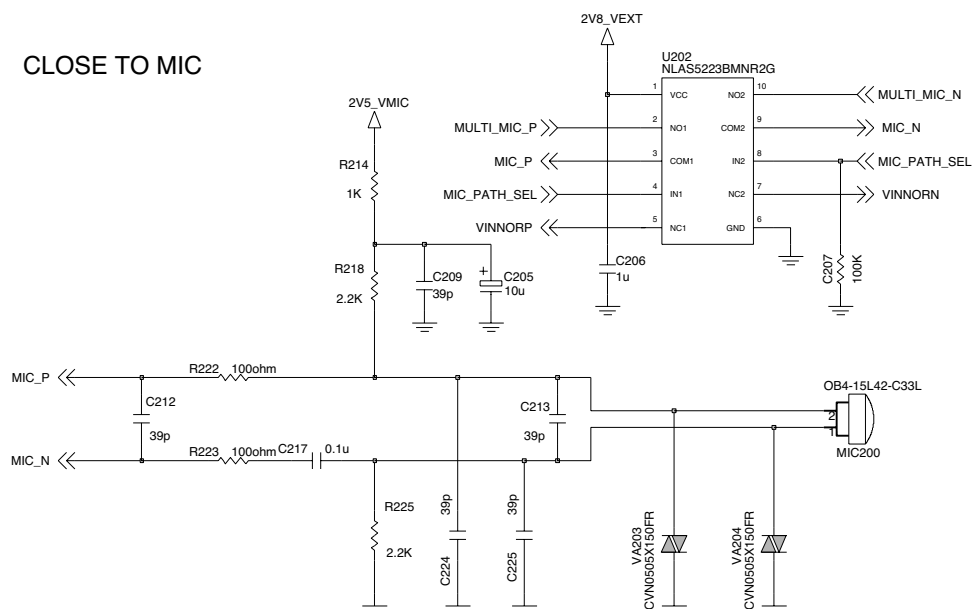


Figure 4.14

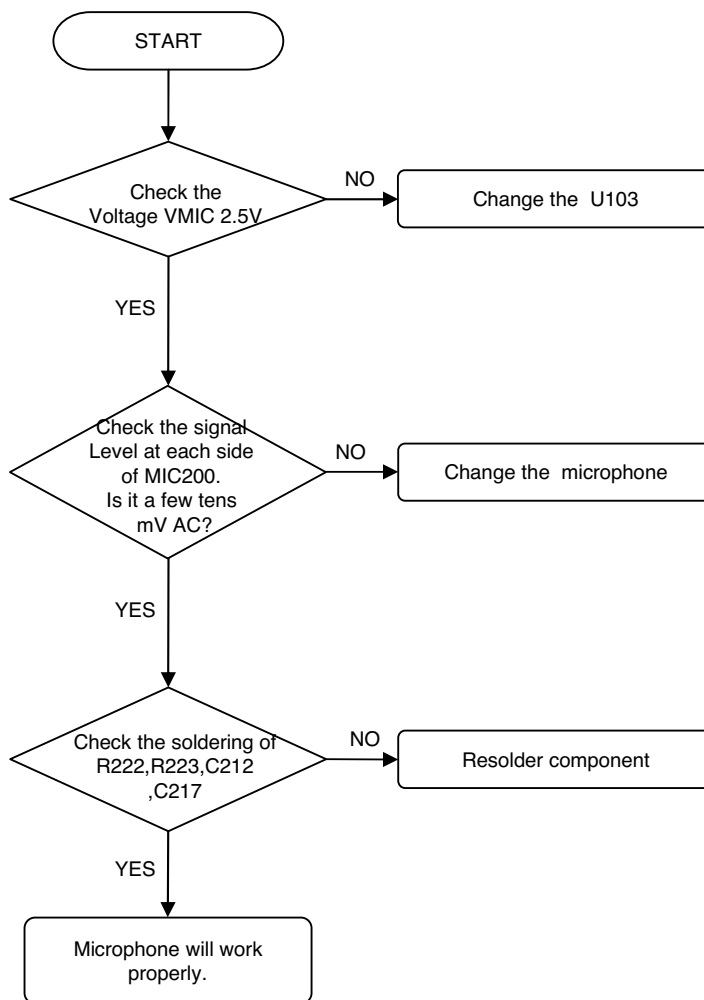
CIRCUIT DIAGRAM



4. TROUBLE SHOOTING

Checking Flow

SETTING : After initialize Agilent 8960, Test GBS850, DCS mode



4.15 RTC Trouble

TEST POINT

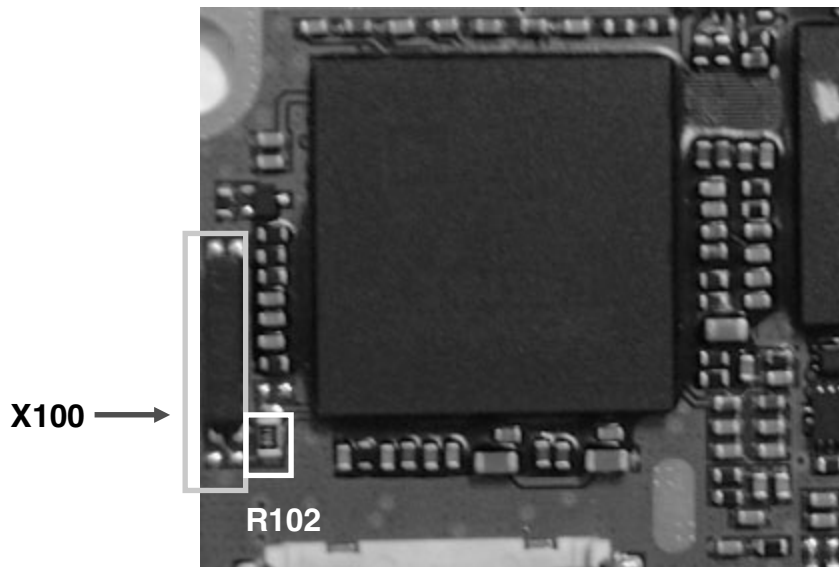
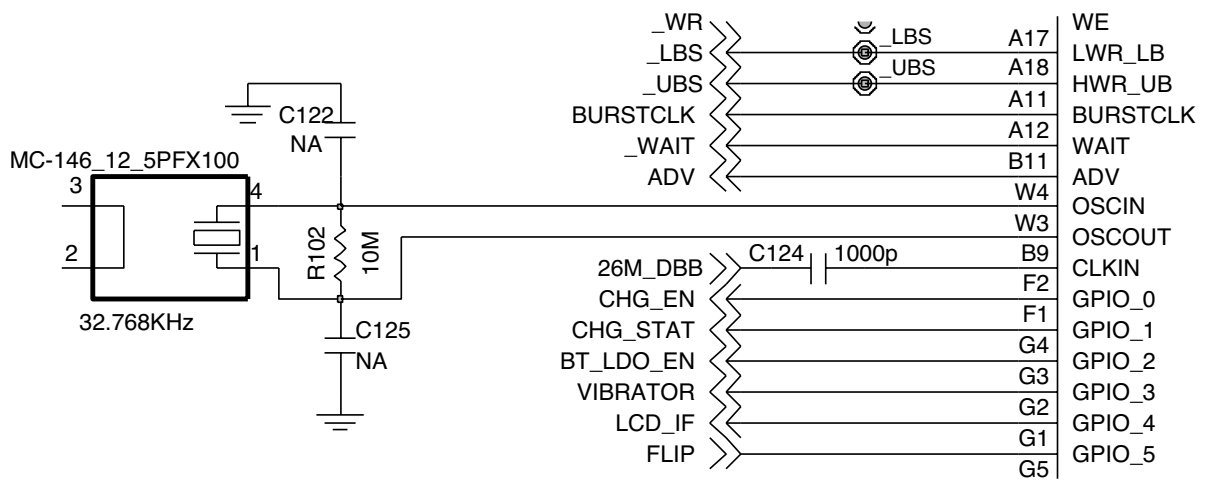


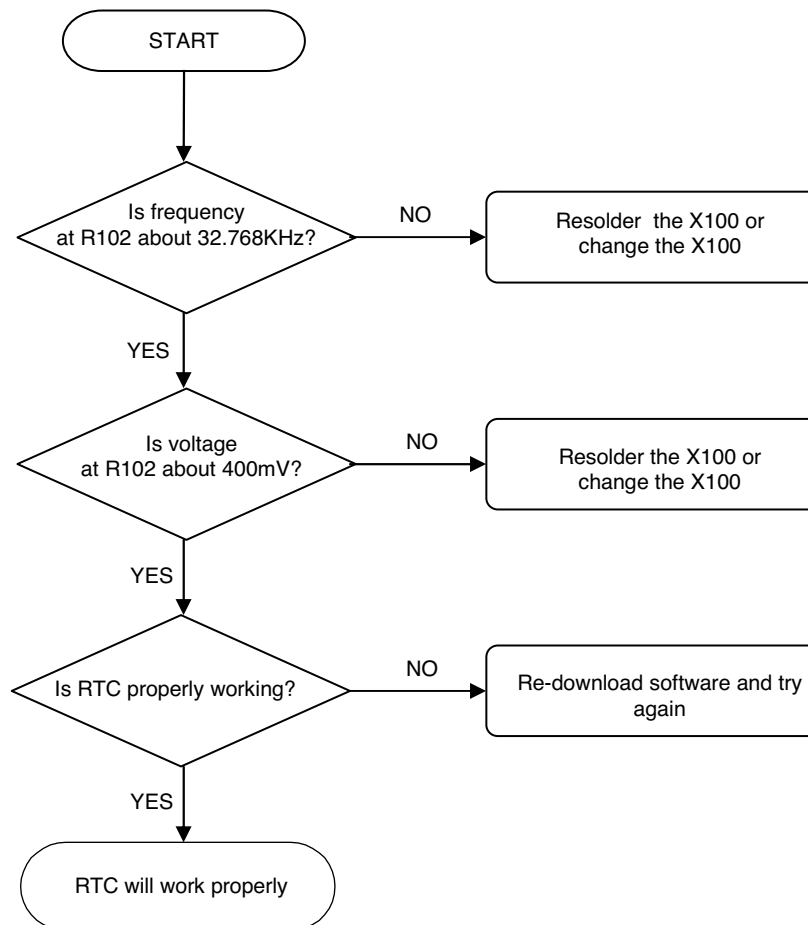
Figure 4.15

CIRCUIT DIAGRAM



4. TROUBLE SHOOTING

Checking Flow



4.16 Folder on/off Trouble

TEST POINT

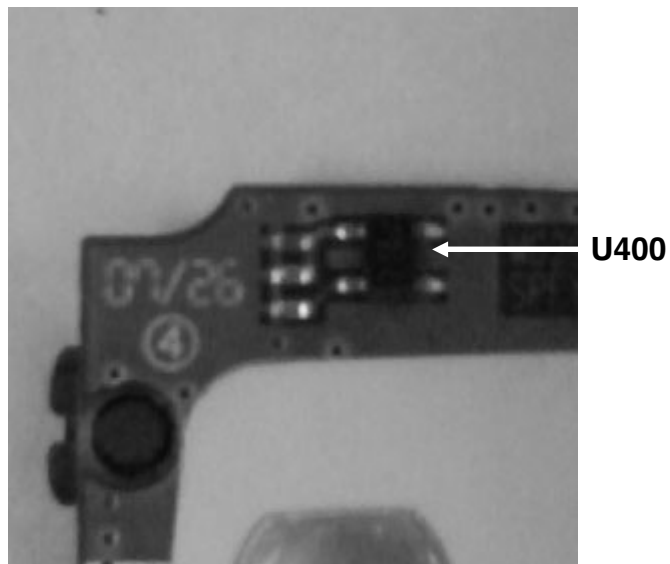
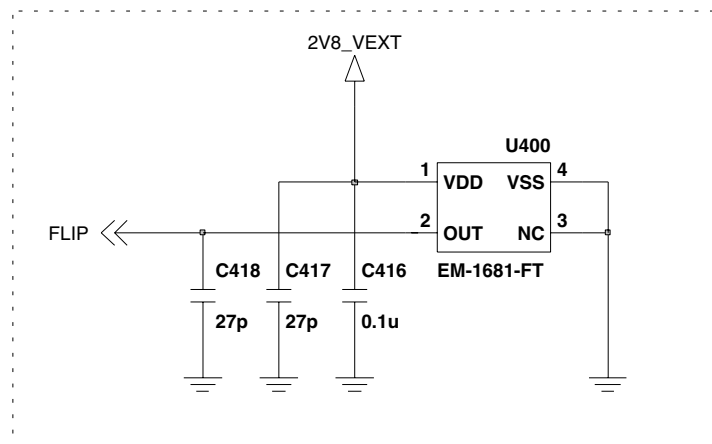


Figure 4.17

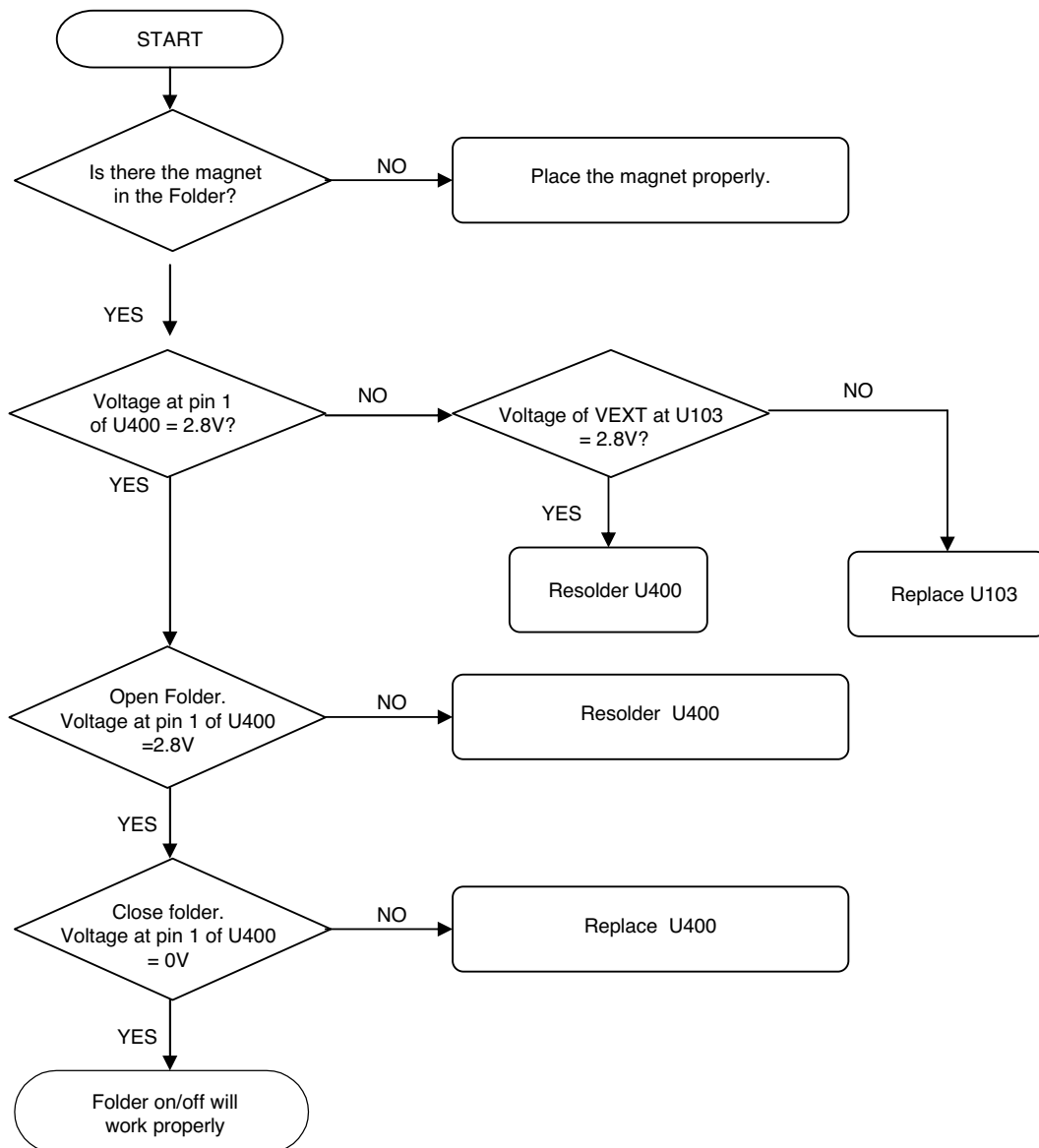
CIRCUIT DIAGRAM

FLIP SWITCH



4. TROUBLE SHOOTING

Checking Flow



4.17 Micro SD Trouble

TEST POINT

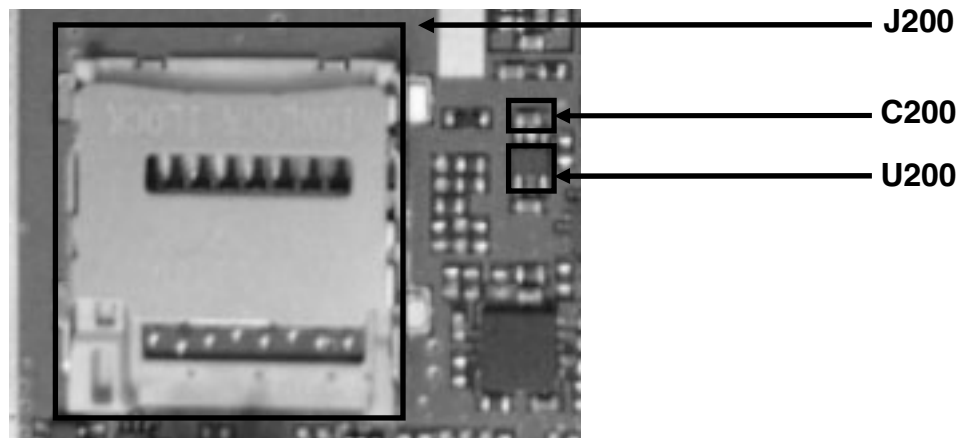
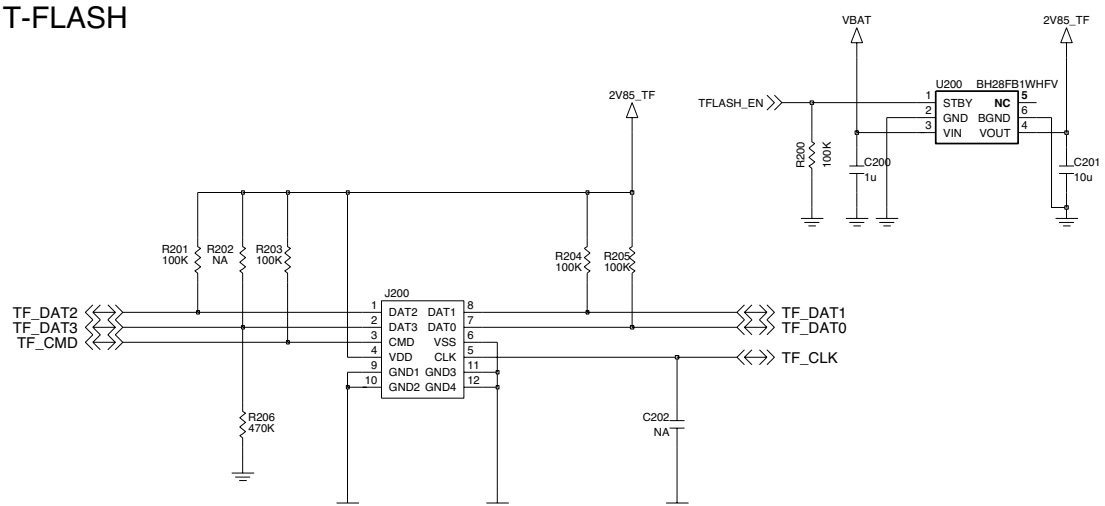


Figure 4.18

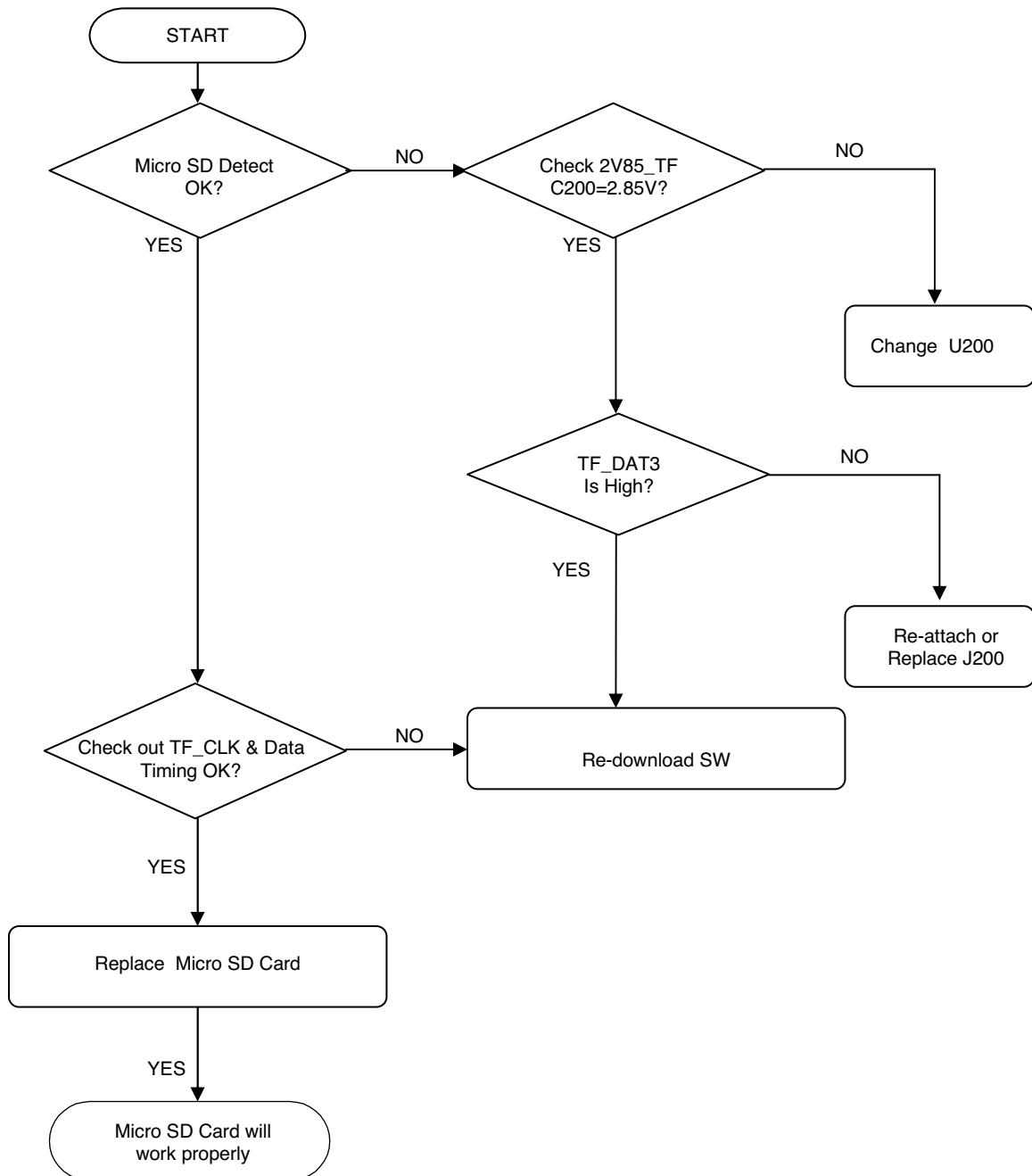
CIRCUIT DIAGRAM

T-FLASH



4. TROUBLE SHOOTING

Checking Flow



4.18 Bluetooth & FM Radio Trouble

TEST POINT

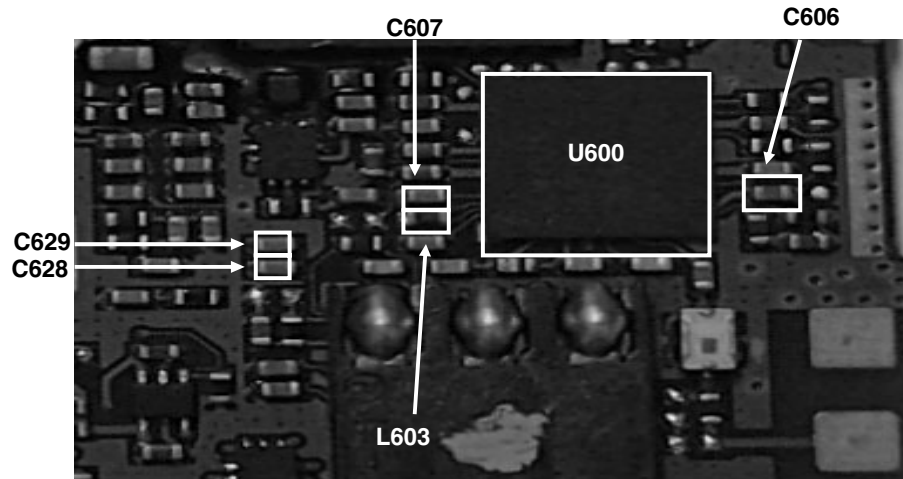
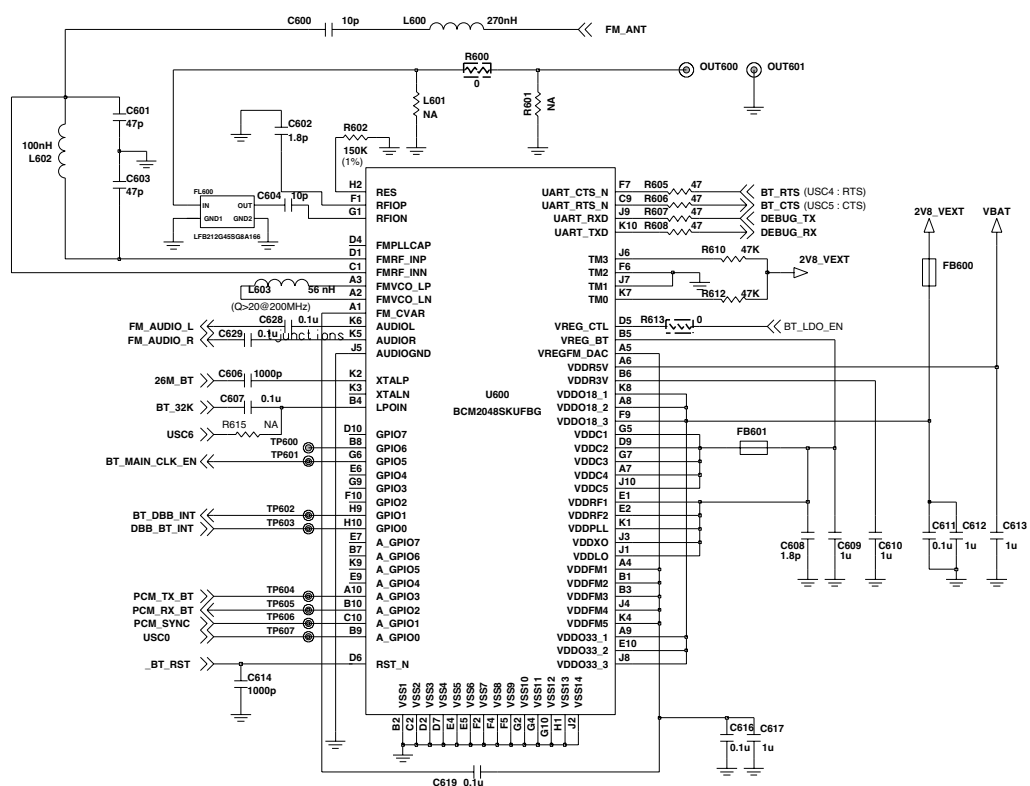


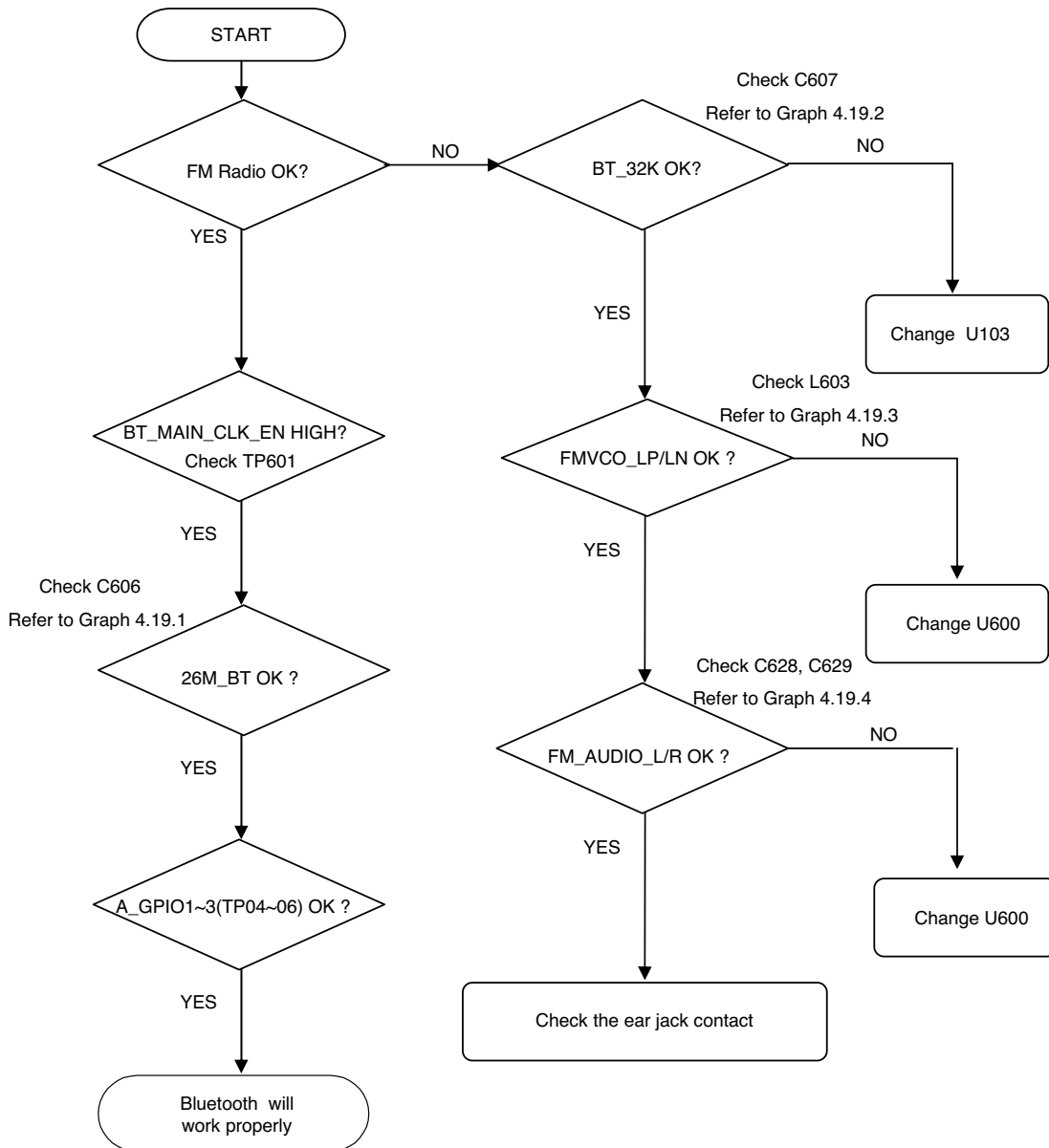
Figure 4.19

CIRCUIT DIAGRAM



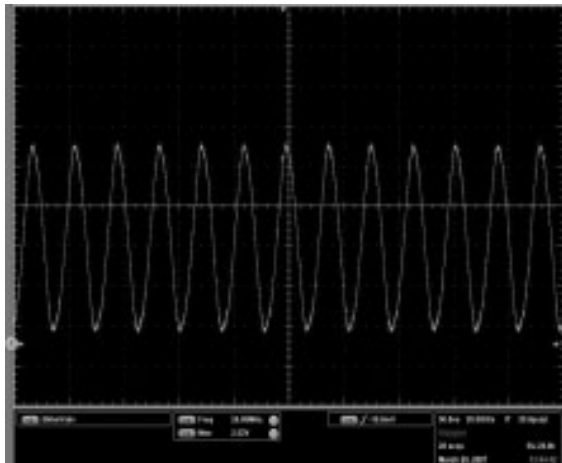
4. TROUBLE SHOOTING

Checking Flow

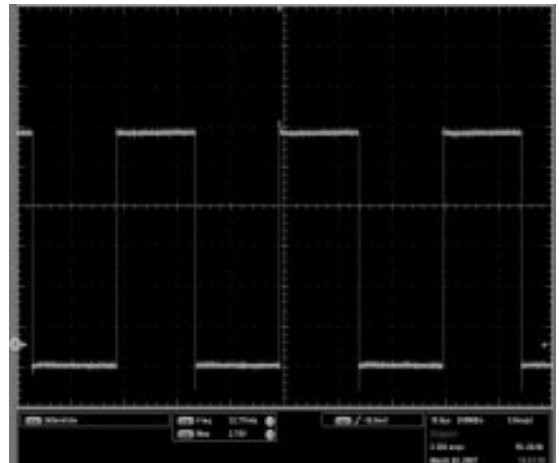


4. TROUBLE SHOOTING

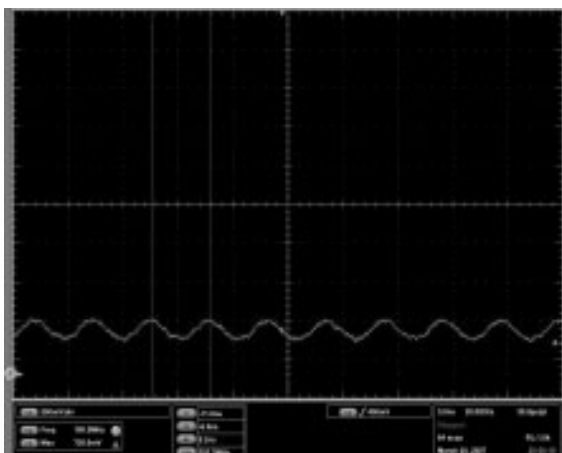
WAVEFORM



Graph 4.19.1



Graph 4.19.2



Graph 4.19.3



Graph 4.19.4

5. DOWNLOAD

5. DOWNLOAD

5.1 Download

A. Download Setup

Figure 5.1 describes Download setup

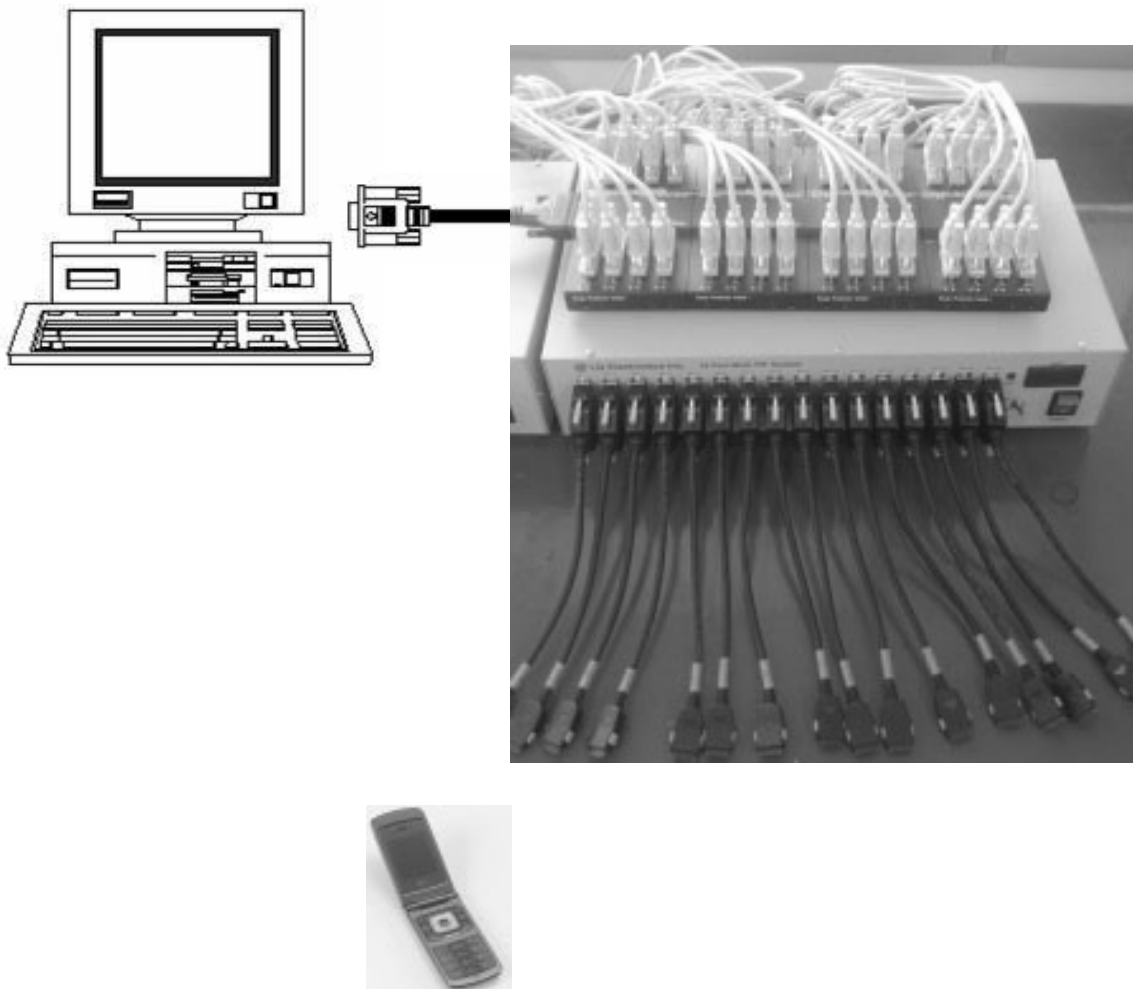
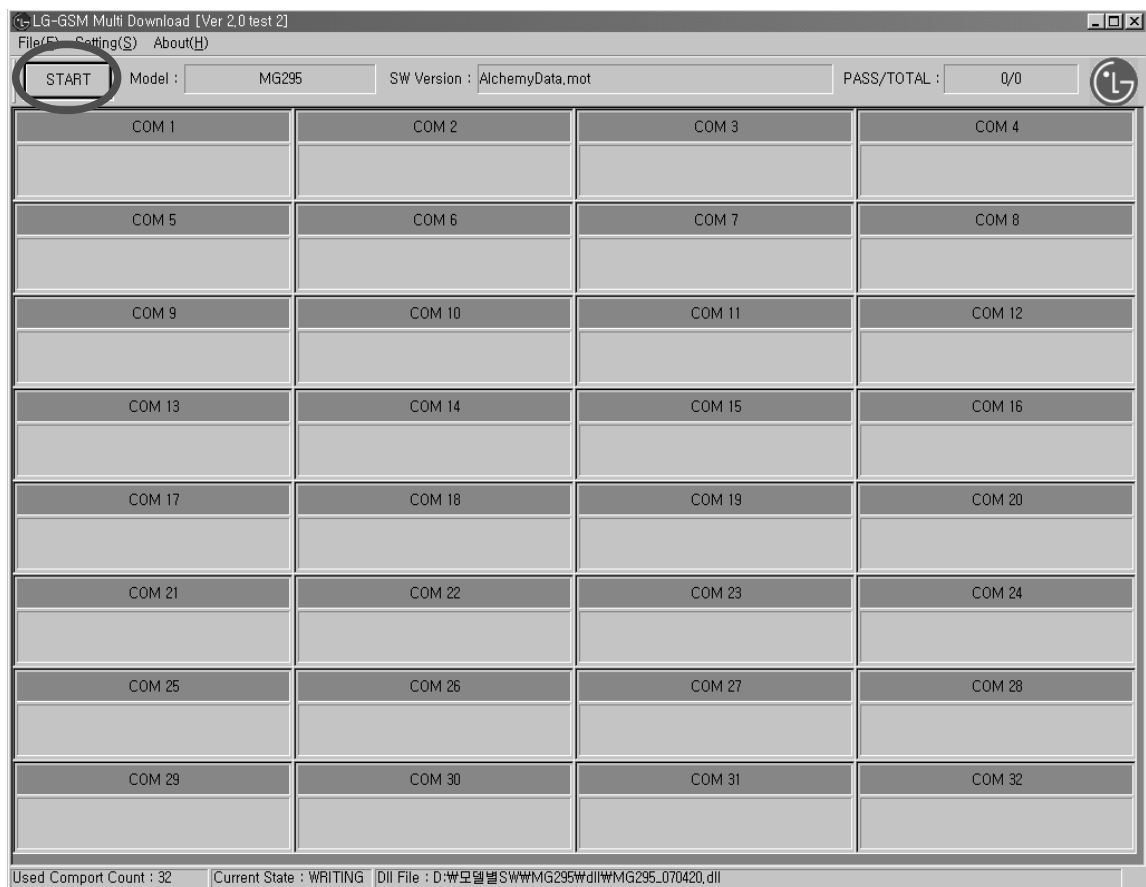


Figure 5.1 Download Setup

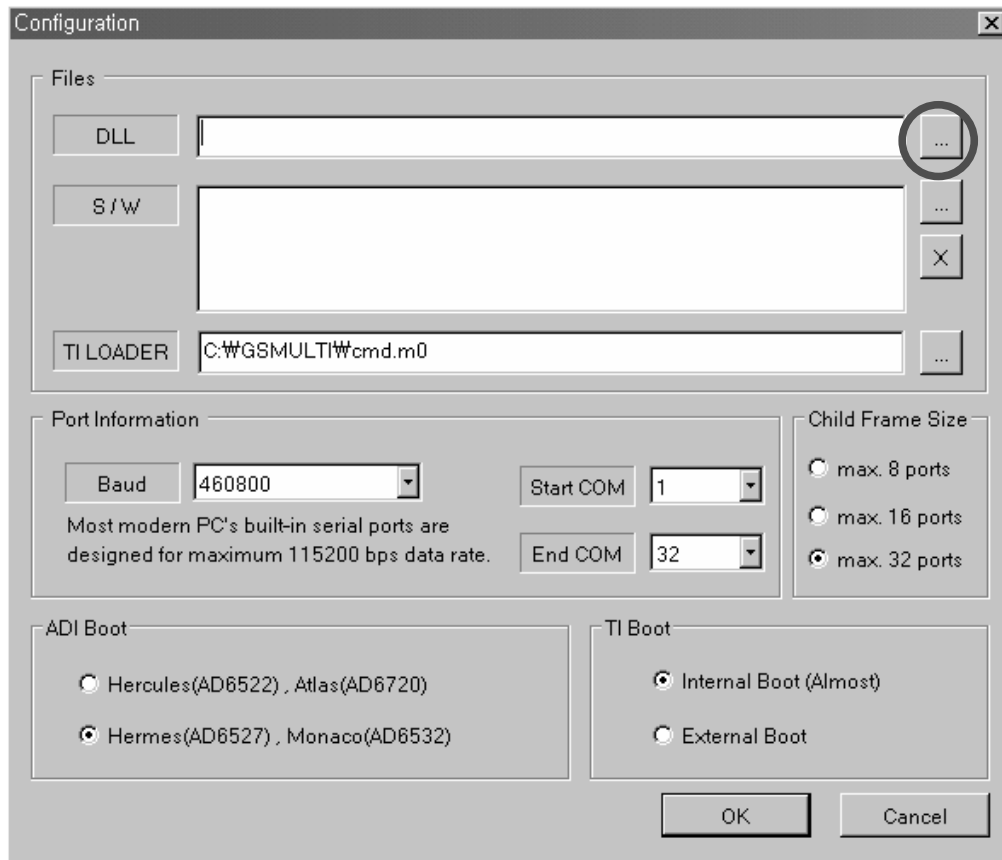
B. Multi Download Procedure

1. Run GSM Multi Download program and select Setting

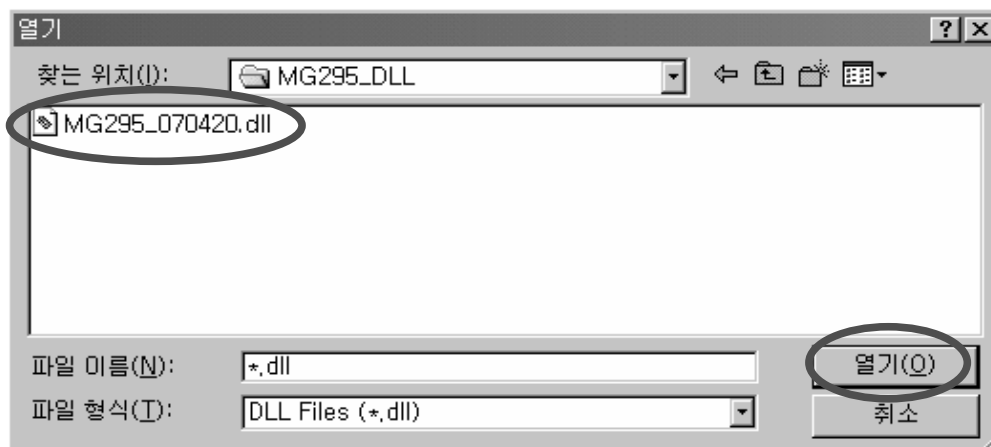


5. DOWNLOAD


2. Select Configuration from the menu and you may see this window

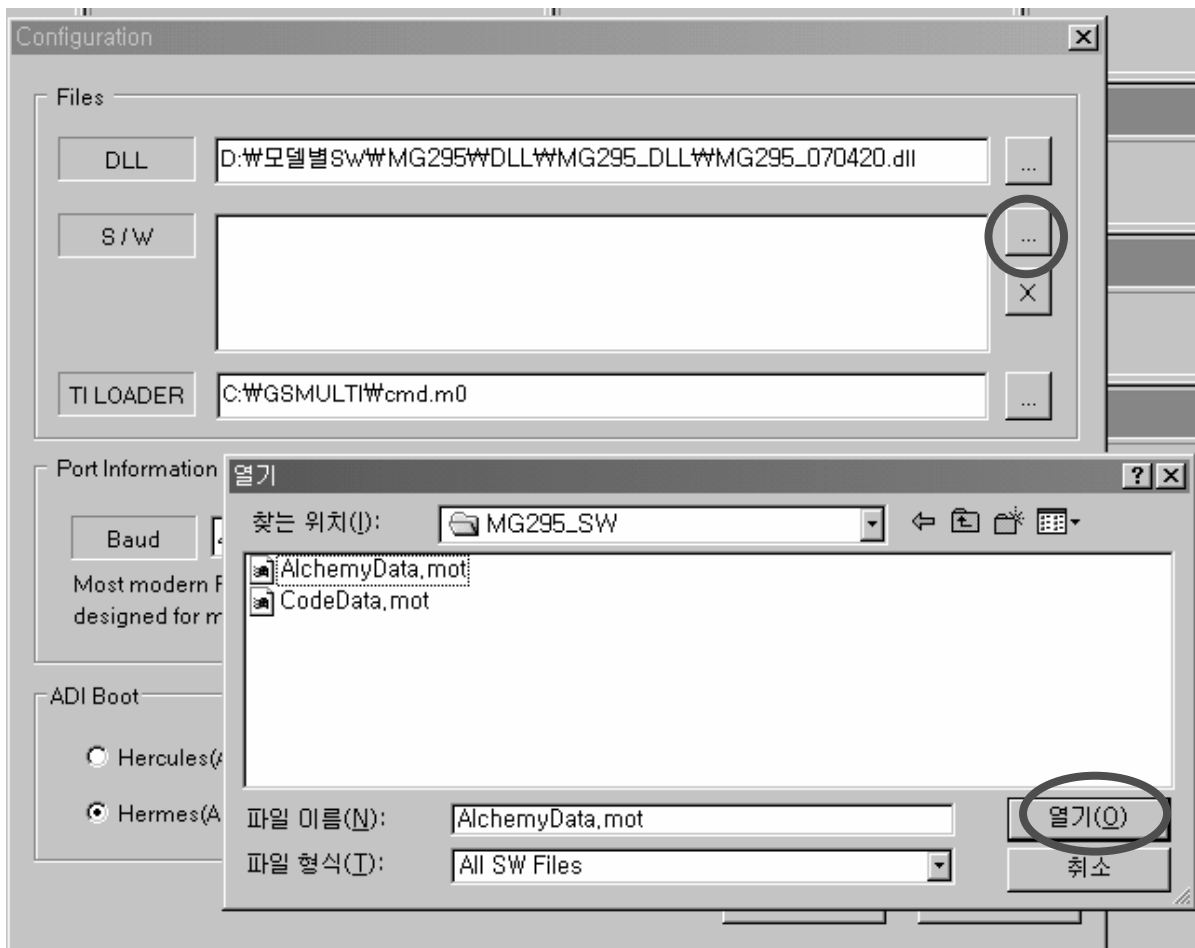


3. Press  key to select DLL file and press Open



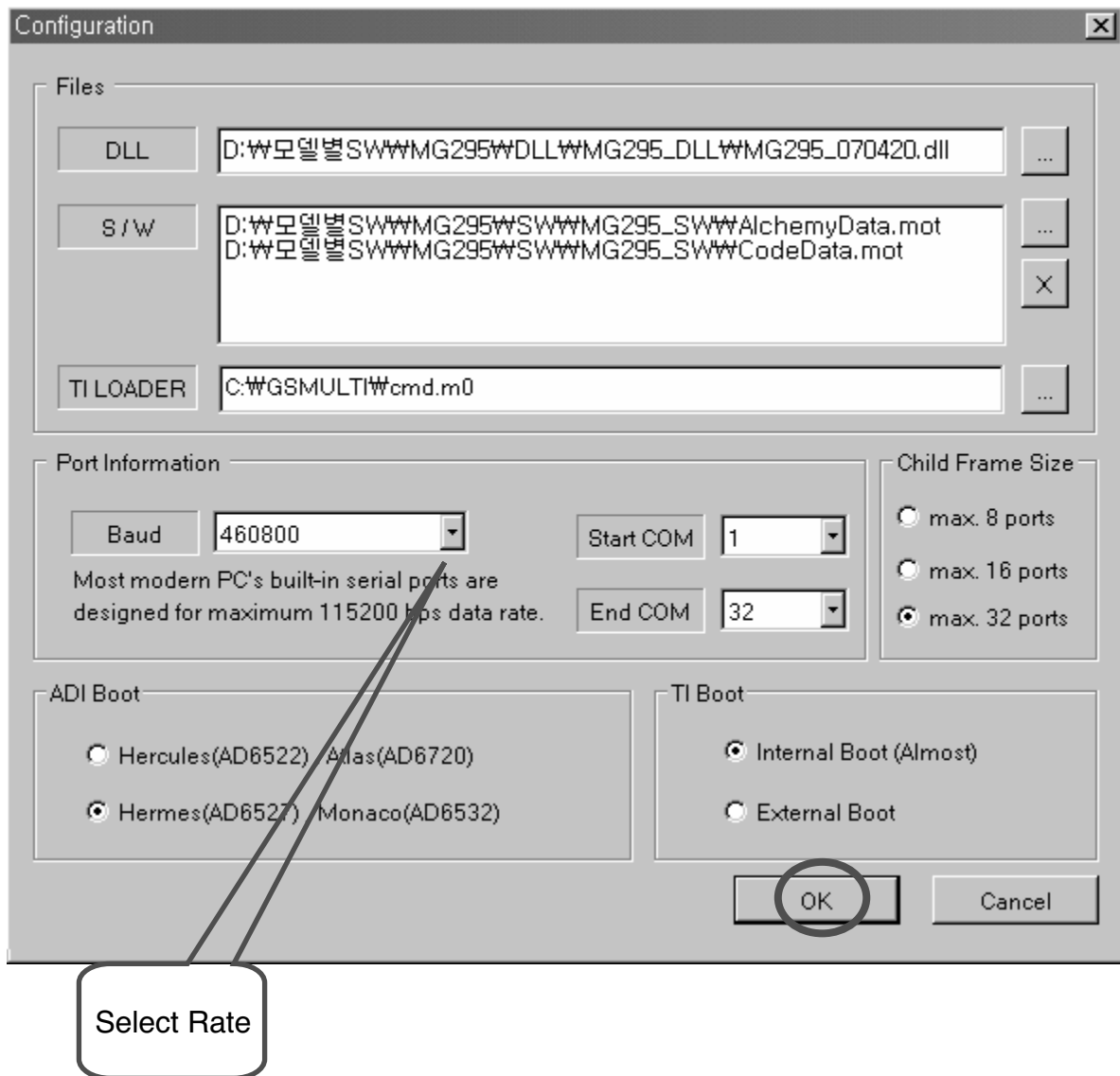
5. DOWNLOAD

4. Press  key to select the mot files
5. Select AlchemyData.mot and press open
6. Repeat step 4-5 to select CodeData.mot



5. DOWNLOAD

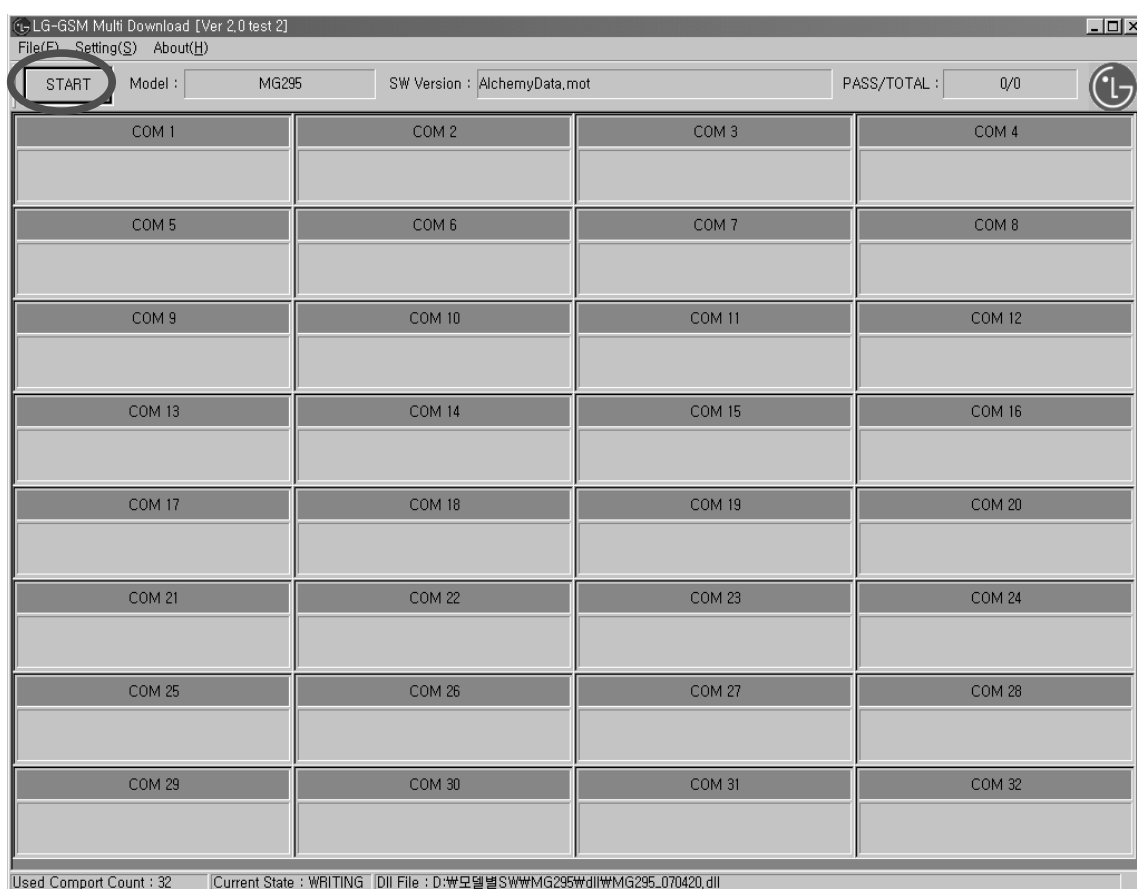
7. Check if the ADI option is set to Hermes
8. Press OK to end Configuration



5. DOWNLOAD

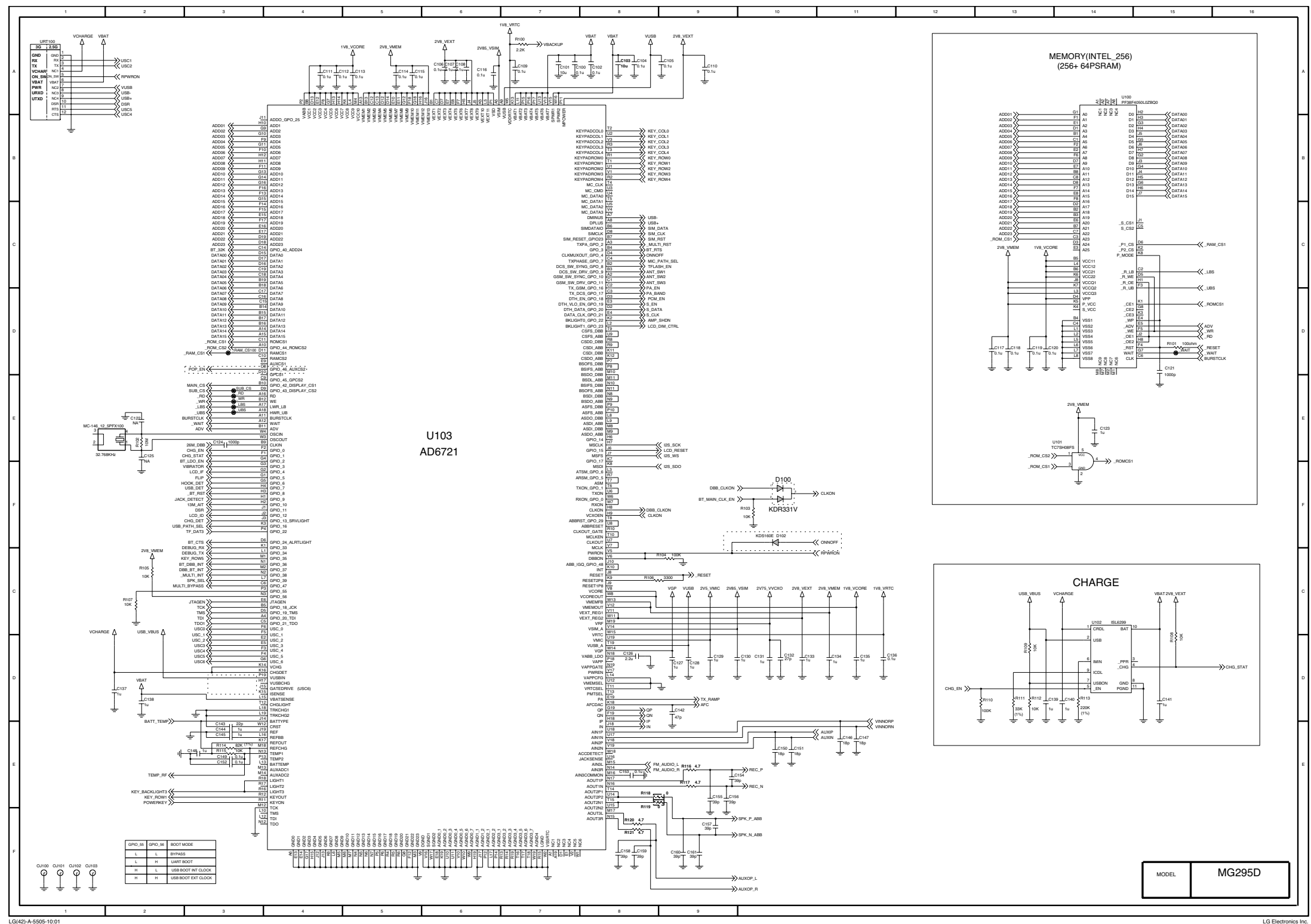
9. Press START to execute download

10. Once downloading is started, press STOP button to keep from re-downloading after downloading is completed.





6. CIRCUIT DIAGRAM

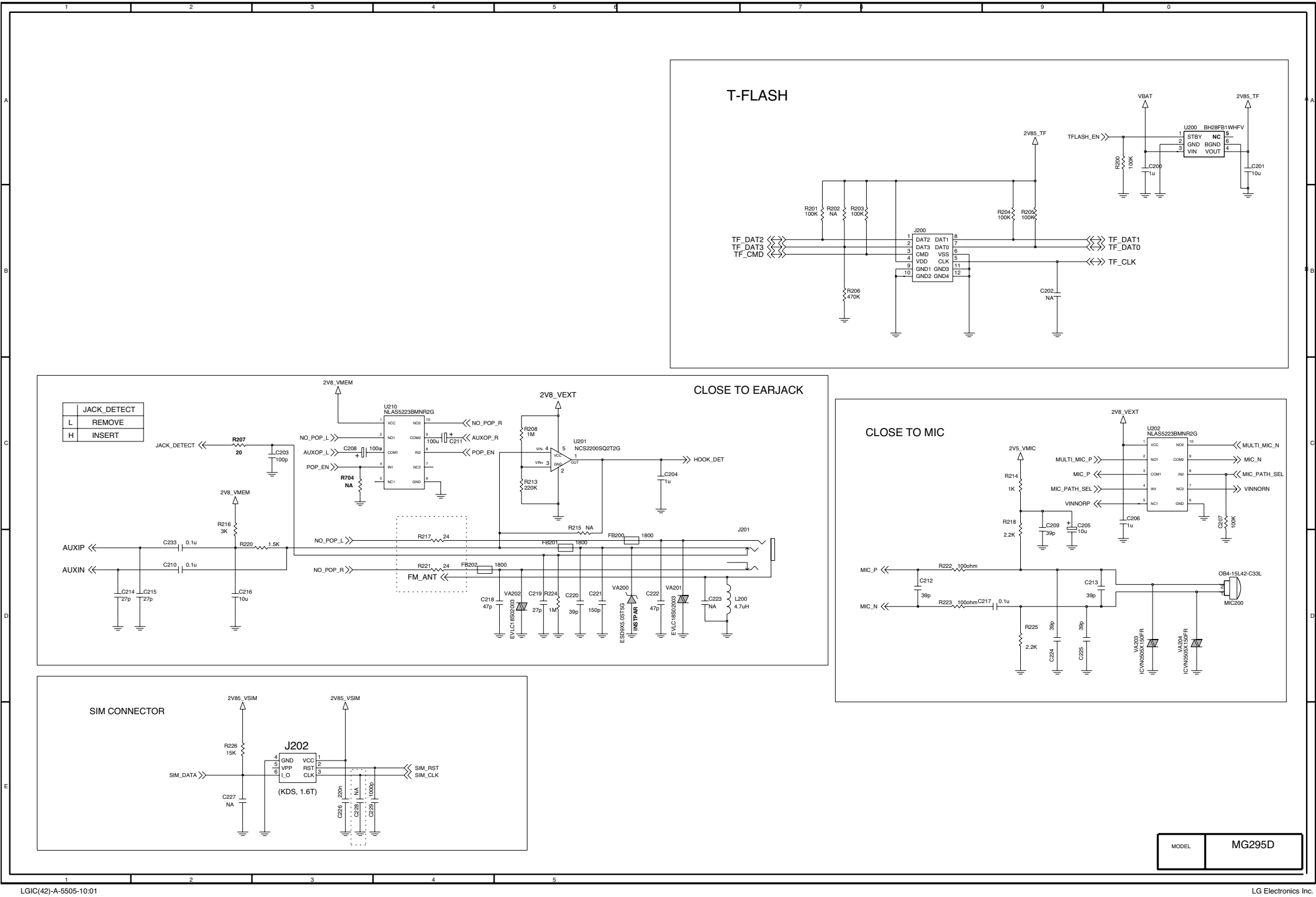


LG(42)-A-5505-10.01

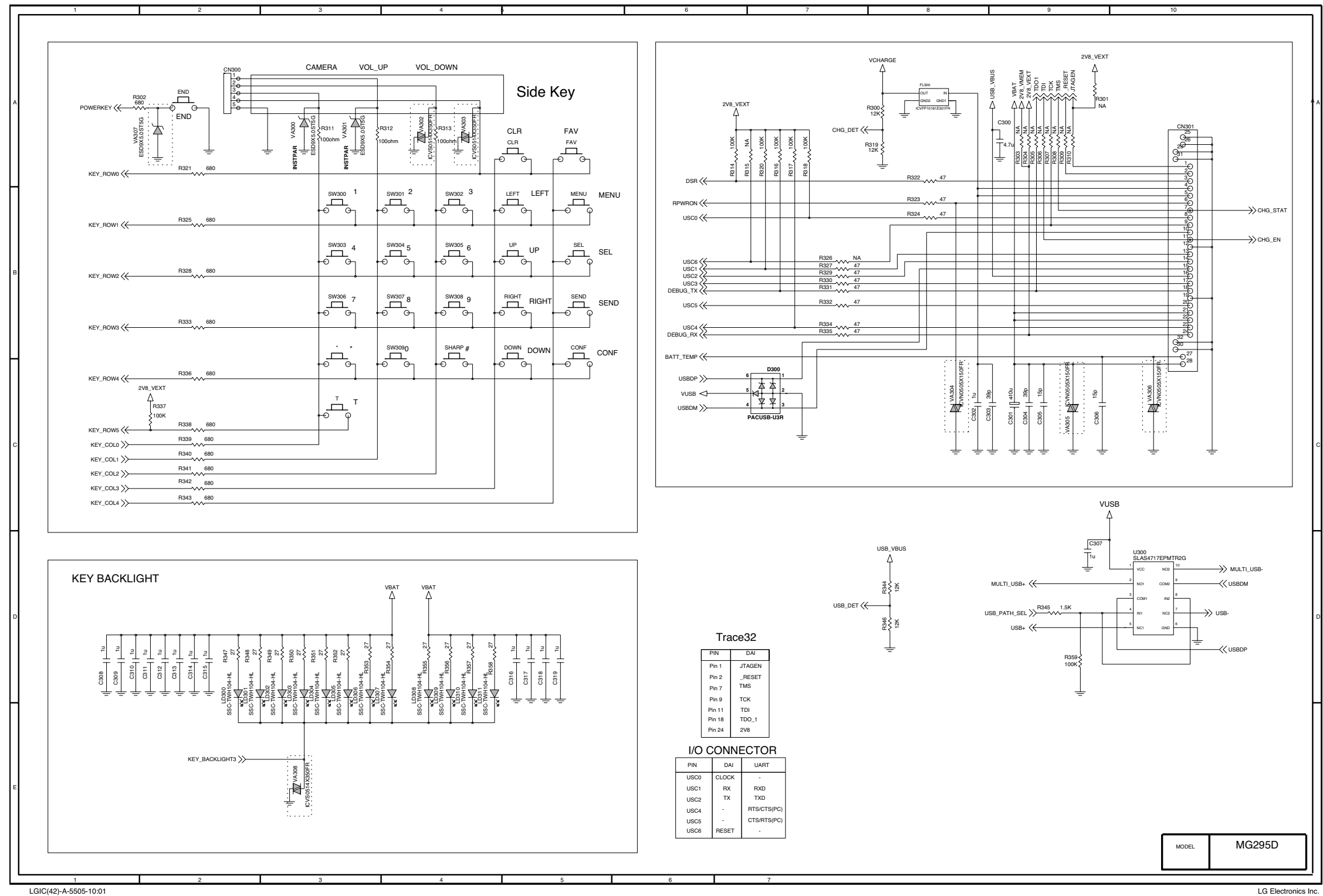
LGMC

LG Electronics Inc.

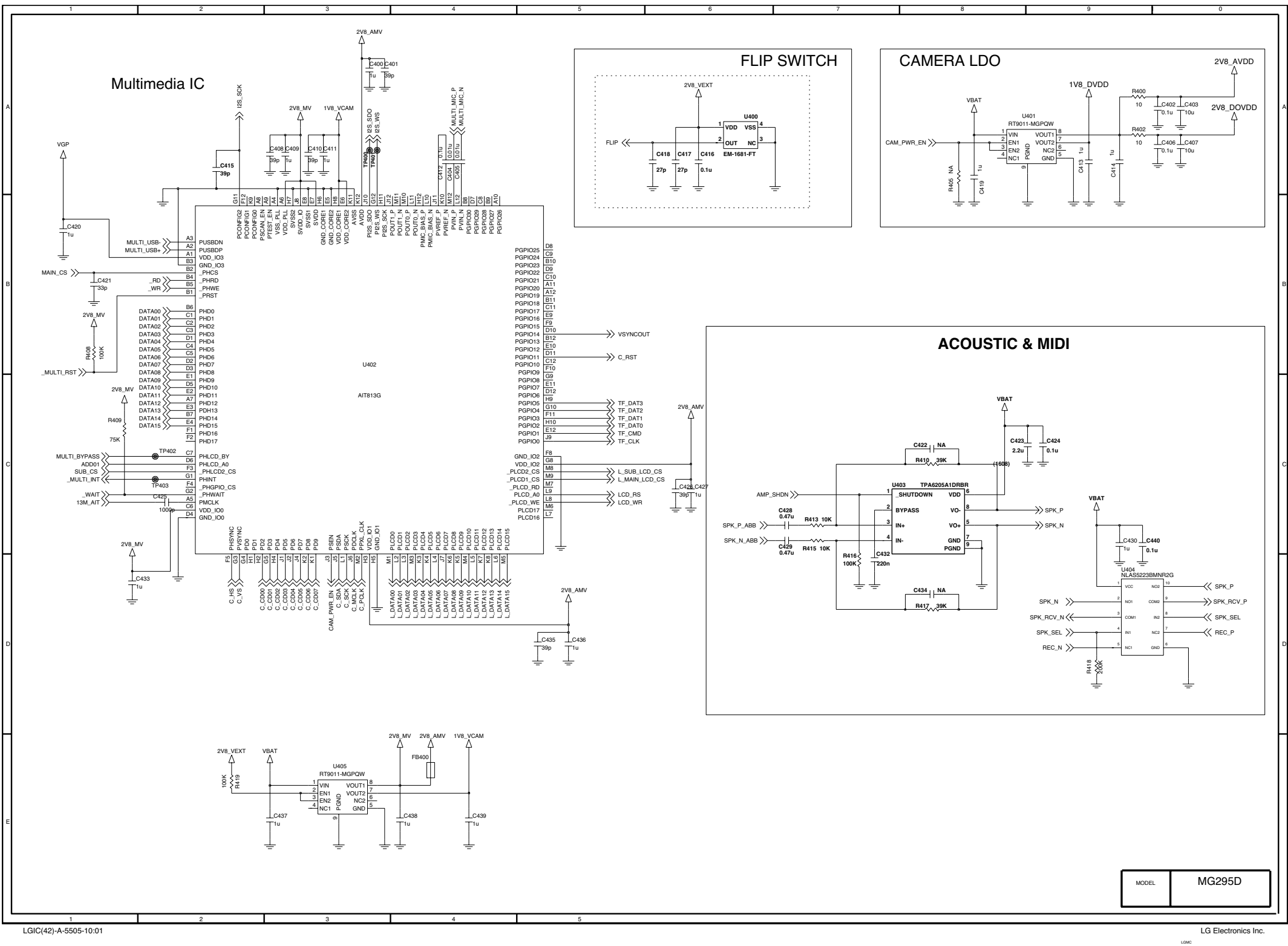
6. CIRCUIT DIAGRAM



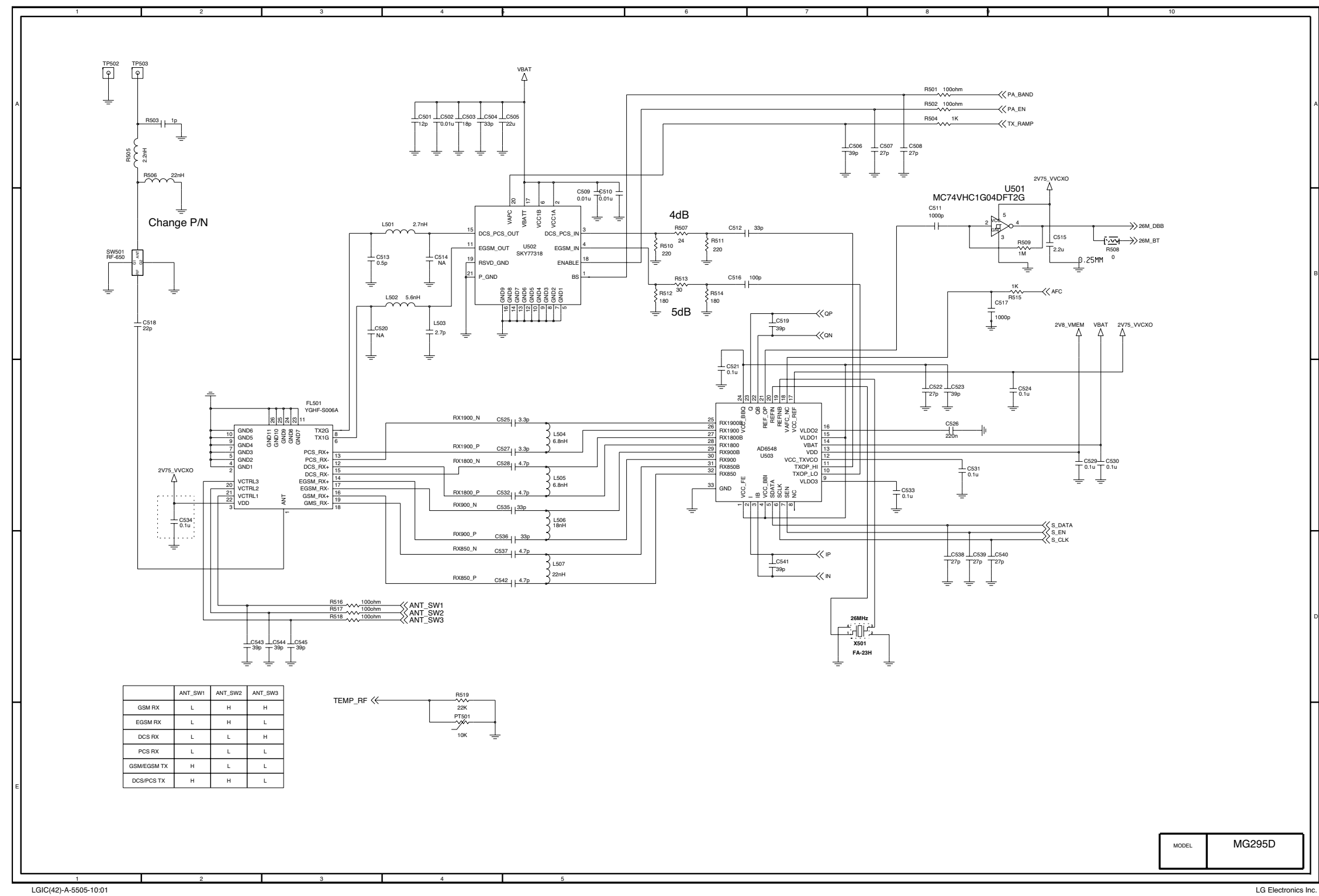
6. CIRCUIT DIAGRAM



6. CIRCUIT DIAGRAM



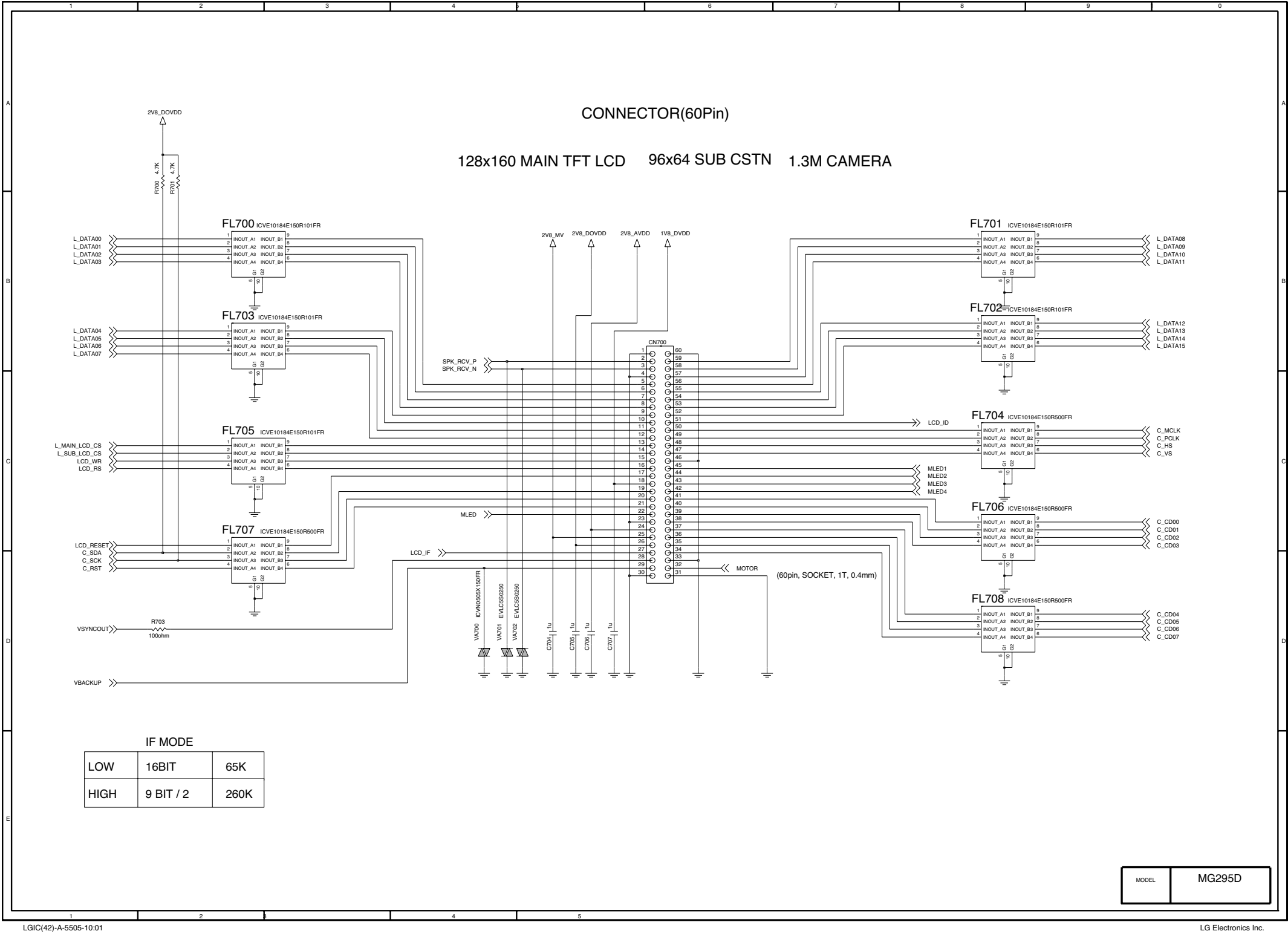
6. CIRCUIT DIAGRAM



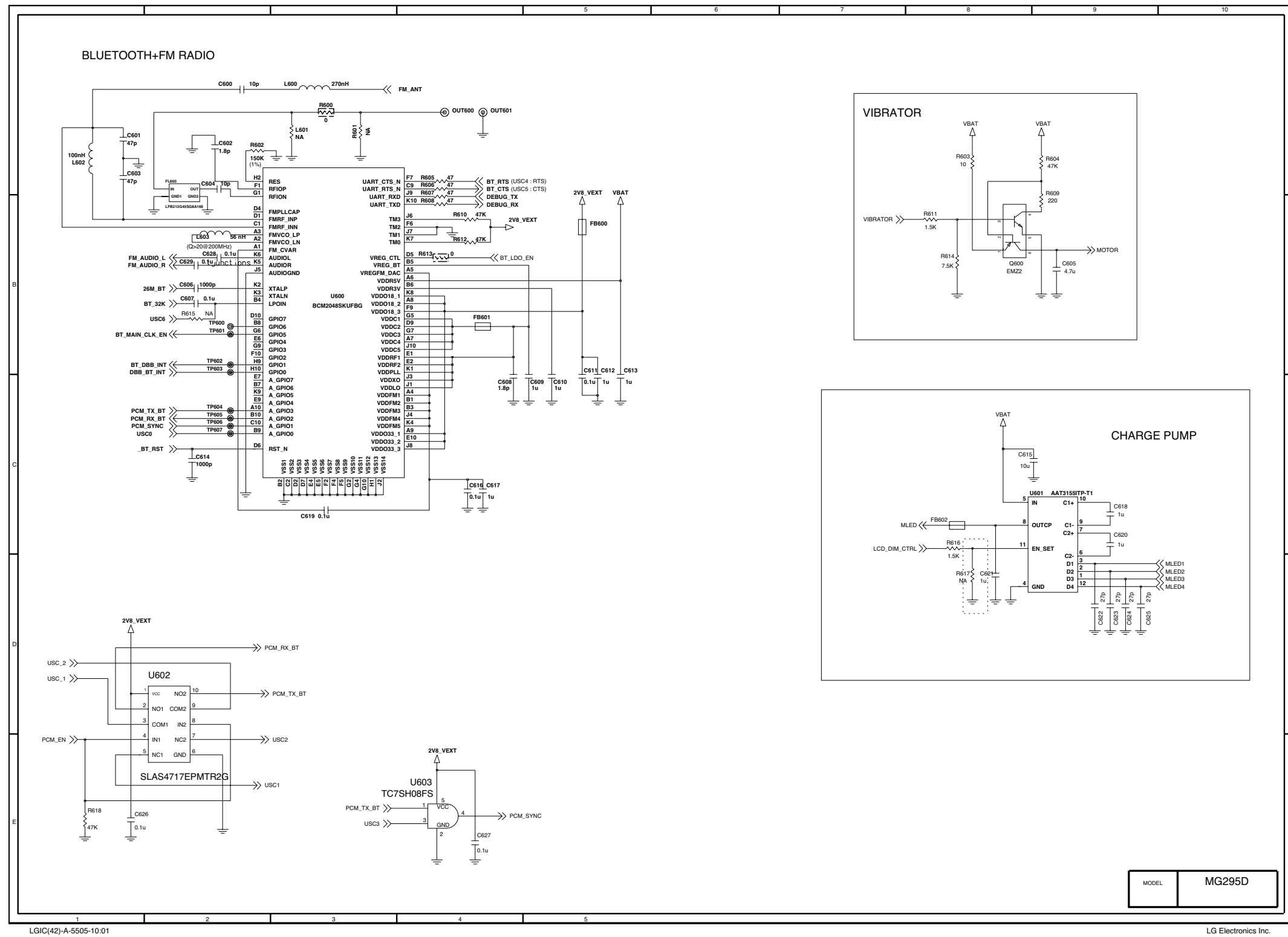
LGIC(42)-A-5505-10-01

LG Electronics Inc.

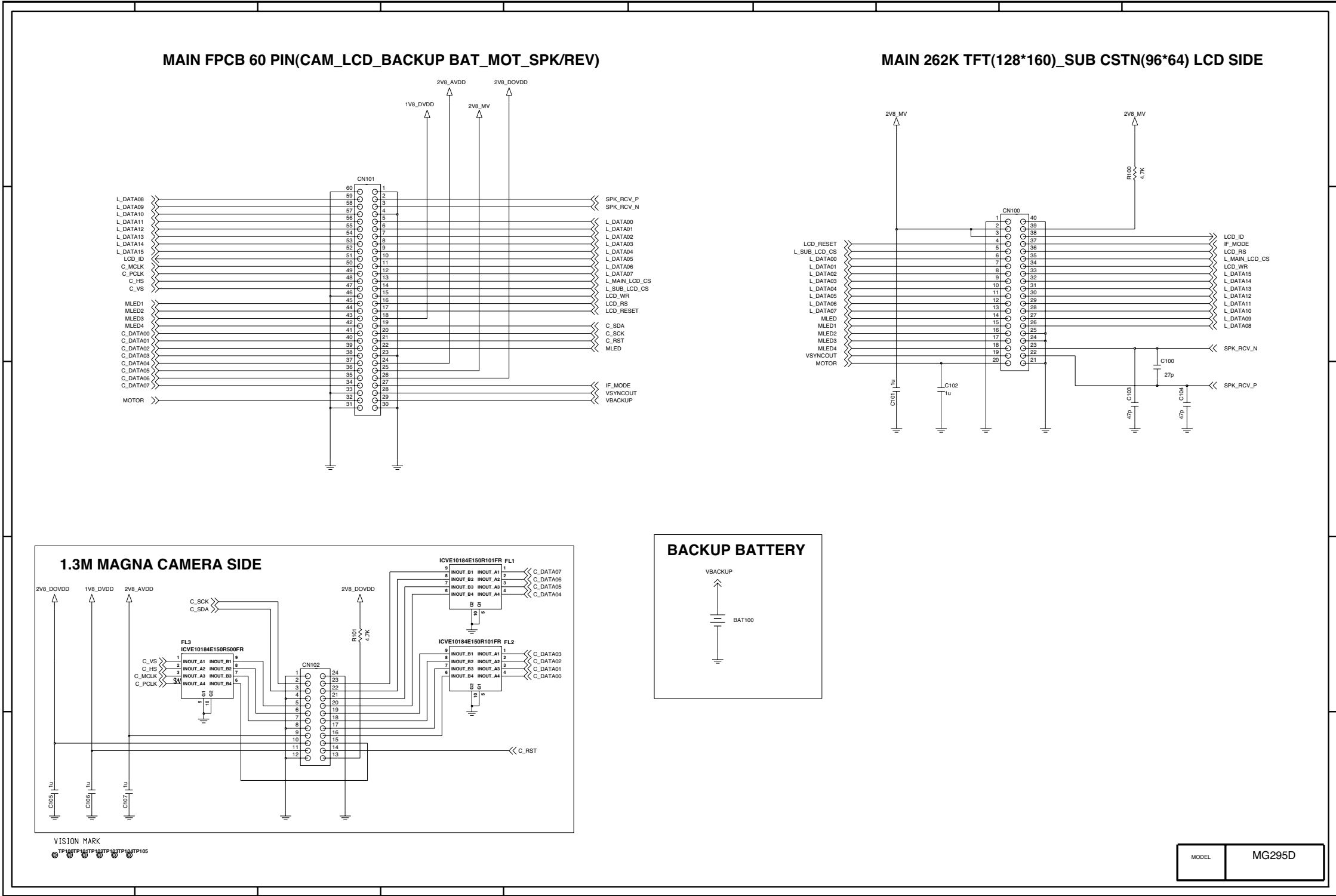
6. CIRCUIT DIAGRAM



6. CIRCUIT DIAGRAM



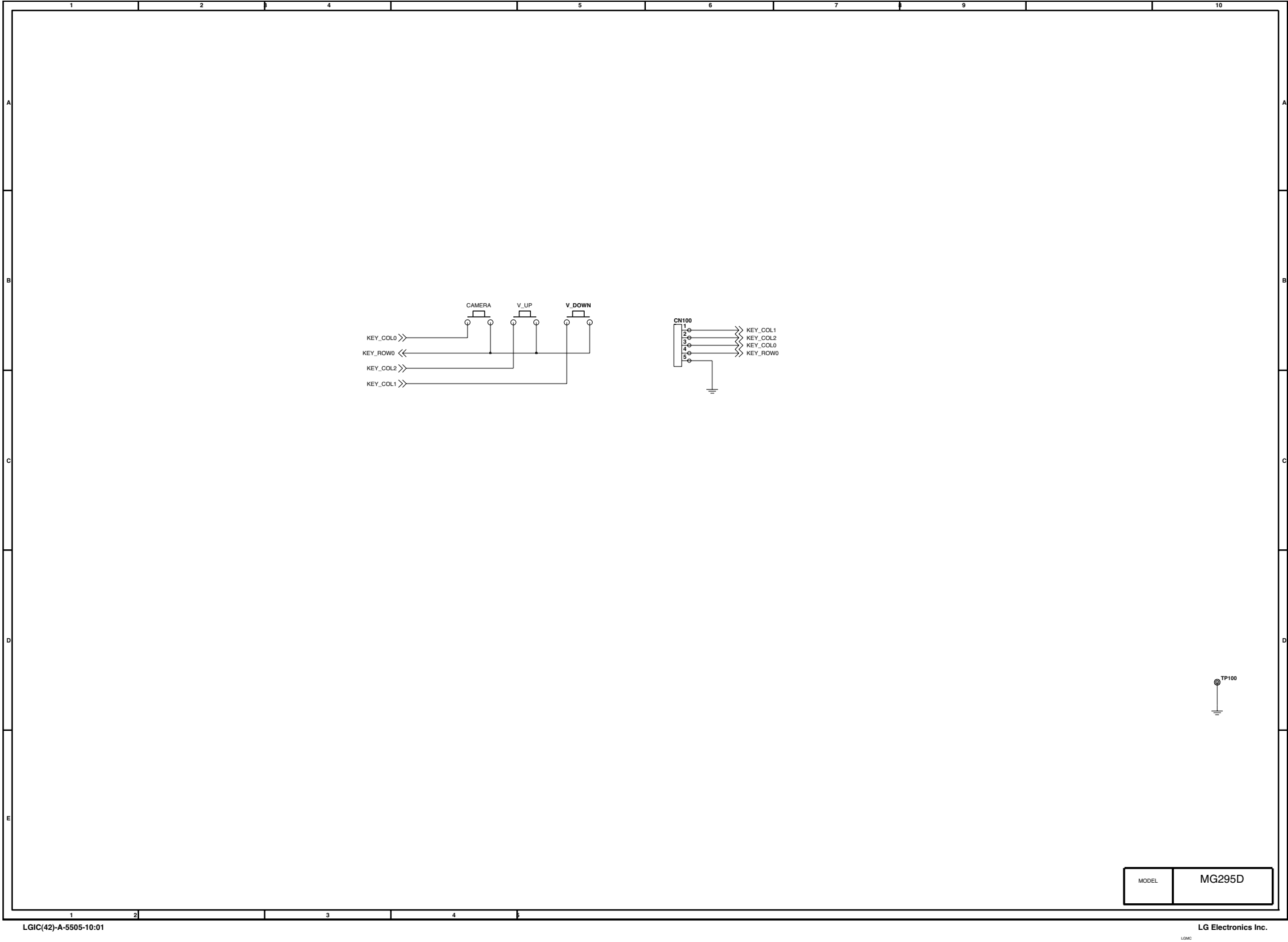
6. CIRCUIT DIAGRAM



LG Electronics Inc.

LG46C

6. CIRCUIT DIAGRAM











7. BGA IC Pin Check

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A		GPI0_18	GPI0_2	GPI0_20	VSW	VSSUSB	DMNUS	DPLUS	VDDUSB	GPI0_44	BURSTCLK	NWAIT	VWEM	DATA[14]	DATA[15]	NRD	NLWR	NHWR	
B	VEXT	GPI0_8	GPI0_9	GPI0_3	GPI0_18	SMDATA0	GPI0_23	VCC	CLKIN	GPI0_42	NADV	NWE	VWEM	DATA[10]	DATA[11]	DATA[13]	DATA[12]	DATA[6]	DATA[5]
C	GPI0_11	GPI0_16	GPI0_17	GPI0_7	GPI0_21	GPI0_47	VEXT	GPI0_46	GPI0_45	NRAMCS2	NRAMCS1	VWEM	VWEM	GPI0_40	DATA[9]	DATA[5]	DATA[7]	DATA[4]	DATA[3]
D		GPI0_20	GPI0_18	GPI0_4	GPI0_19	GPI0_24	VEXT	SIMCLK	GPI0_43	NGPCS1	NRAMCS1	VWEM	VCC	VWEM	DATA[0]	DATA[2]	DATA[1]	AD[23]	AD[22]
E		USC[2]	GPI0_19	GPI0_21	USC[3]	JTAGEN	VEXT	VEXT	NAUKCS1	VWEM	VWEM	VCC	GND	GND	AD[18]	AD[20]	AD[24]	AGND8	PA
F	GPI0_1	GPI0_8	USC[4]	USC[5]	USC[1]	USC[8]	VEXT	VCC	AD[4]	AD[6]	AD[8]	GND	AD[14]	AD[16]	AD[17]	AD[13]	AD[19]	VWEM	ON
G	GPI0_5	GPI0_4	GPI0_3	GPI0_2	GPI0_5	USC[6]	VCC	GND	AD[2]	AD[5]	AD[9]	VWEM	AD[10]	AD[11]	AD[15]	AD[12]	GND	VWEM	DP
H	GPI0_9	GPI0_10	GPI0_8	GPI0_7	VEXT	GPI0_14	MSCLK	CLKIN	VCKDEN	AD[1]	AD[8]	AD[7]	VCC	VCC	GND	VWEM	VUSBCMG	IP	AGND1
J	GPI0_11	GPI0_12	GPI0_13	VEXT	VEXT	GPI0_15	MSFS	NRESET	RESET[2]	GPI0_48	AD[10]	GND	GND	BATTTYPE	GATEDRIVE	VWEM	AGND1	IN	REF
K	GPI0_33	GPI0_22	GPI0_16	VCC	VEXT	GND	GPI0_17	MSDI	RESET[2]	WT	CS[0]_DBB	CS[0]_ABB	VBAT	VCHG	ISENSE	CHGDET	REFOUT	APC[4C]	AGND9
L	GPI0_34	GPI0_23	GPI0_6	VCC	VEXT	GND	GPI0_39	AS[0]_DBB	AS[0]_ABB	TMS	VBAT	TDI	BATT[EMP]	VAPPCFG	VBAT[SENSE]	REFB5	AGND2	TRKCHG1	TRKCHG2
M	GPI0_35	GPI0_37	GND	VCC	GND	GND	GND	AS[0]_DBB	AS[0]_ABB	BS[0]_DBB	BS[0]_ABB	TCK	AUXADC1	AUXADC2	AINL	AIN3C	AD[13L]	REFCH5	VREF
N	GPI0_38	GPI0_38	GPI0_56	GND	GND	GND	GND	BS[0]_DBB	BS[0]_ABB	BS[0]_DBB	BS[0]_ABB	TDO	TEMP1	AGND4	AD[19R]	AD[17N]	AD[17P]	VAB5	VAPPGATE
P	VINC	VINT	GPI0_55	GPI0_22	GND	GND	GND	BS[0]_DBB	BS[0]_ABB	AS[0]_DBB	AS[0]_ABB	MPWR	AGND2	TEMP2	AGND3	VBAT	VBAT	VBAT	VAPP
R	KEYPADROW[0]	KEYPADROW[1]	KEYPADCOL[0]	GND	GND	GND	GPI0_5	CS[0]_DBB	CS[0]_ABB	CLKOUT_GATE	KEYON	KEYOUT	AGND3	AGND3	LGN0	LIGHT3	LIGHT2	LIGHT1	AGND3
T	KEYPADROW[1]	KEYPADCOL[1]	KEYPADCOL[1]	MC_CLK	MC_DAT[1]	GPI0_1	AS[0]	GPI0_29	CS[0]_DBB	MCLKEN	VR[CS]SEL	ENLIGHT		AD[17P]	AD[17N]	AGND3	AGND3	AGND3	VUSB
U	KEYPADROW[2]	KEYPADCOL[2]	MC_CMD	MC_DAT[0]	MC_DAT[2]	TXON	CLKOUT	AS[0]_DBB	CS[0]_ABB	AGND0	AGND0	VWEMSEL	VBAT	AD[17P]	AD[17N]	JACK[SENSE]	AIN[1N]	AIN[1P]	VMIC
V	KEYPADROW[3]		KEYPADCOL[3]	MC_DAT[3]	PWRON	DBRON	MCLK	VCORE	DGND	AGND0	VEXT_REG	VWEMOUT	VBAT	VSW_REG	SPWR	SGND	PWR[EN]	AIN[2P]	AIN[2N]
W		VSR[TC]	OSCOUT	OSCIN	VDD[TC]	GPI0_8	R[ON]	V[CORE]OUT	AGND8	AGND8	VEXT_REG	CRST	VWEMFS	VGP	V[TC]	SPWR	SGND	ACC[DETECT]	AGND4

U103 AD6721(EUSY0321501) PIN MAP

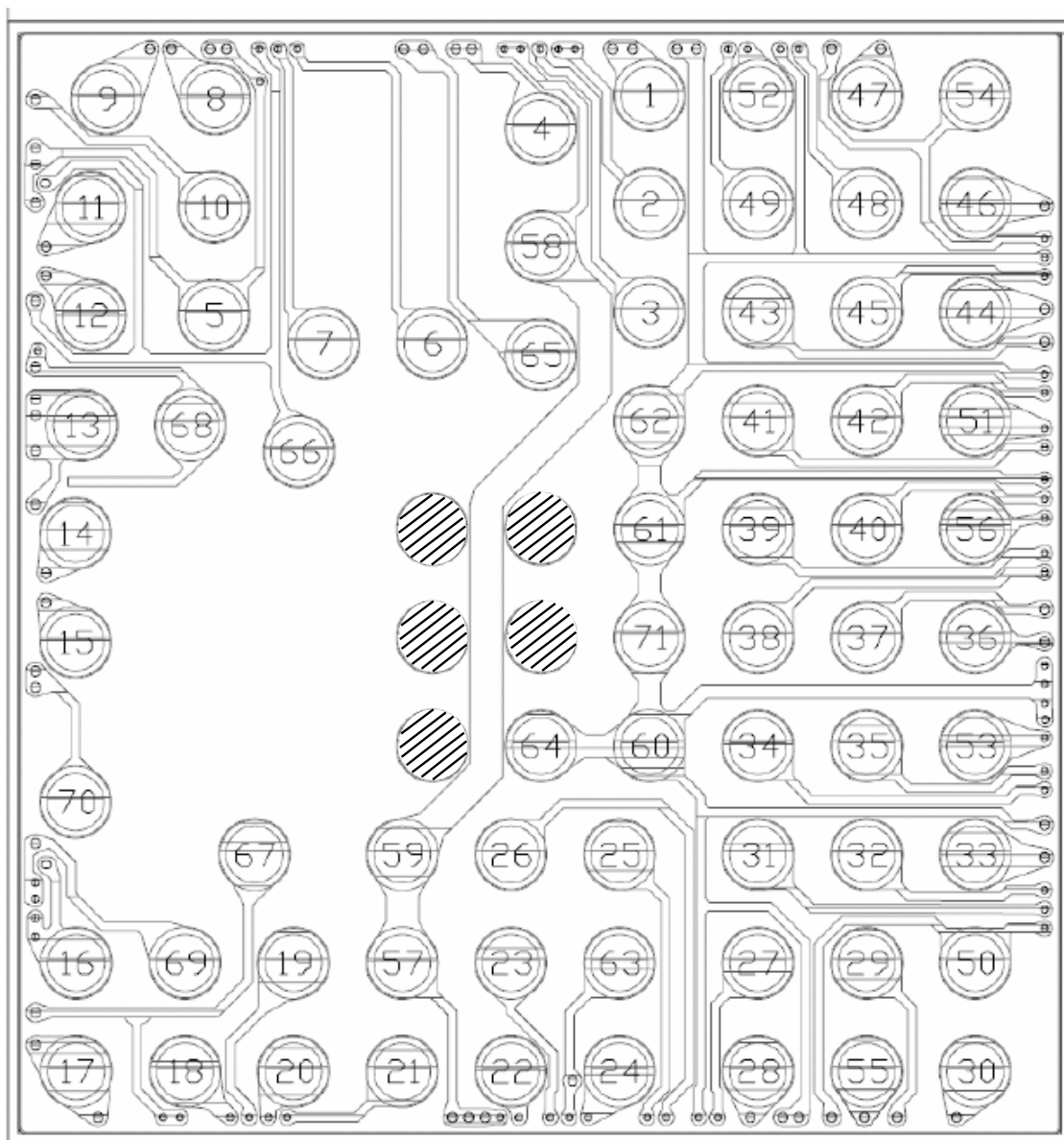
Not used

7. BGA IC Pin Check

	1	2	3	4	5	6	7	8	
A									A
B									B
C									C
D									D
E									E
F									F
G									G
H									H
J									J
K									K
L									L
M									M
	1	2	3	4	5	6	7	8	

U100 PF38F4050L0ZBQ0 (EUSY0229501) PIN MAP  Not used

7. BGA IC Pin Check

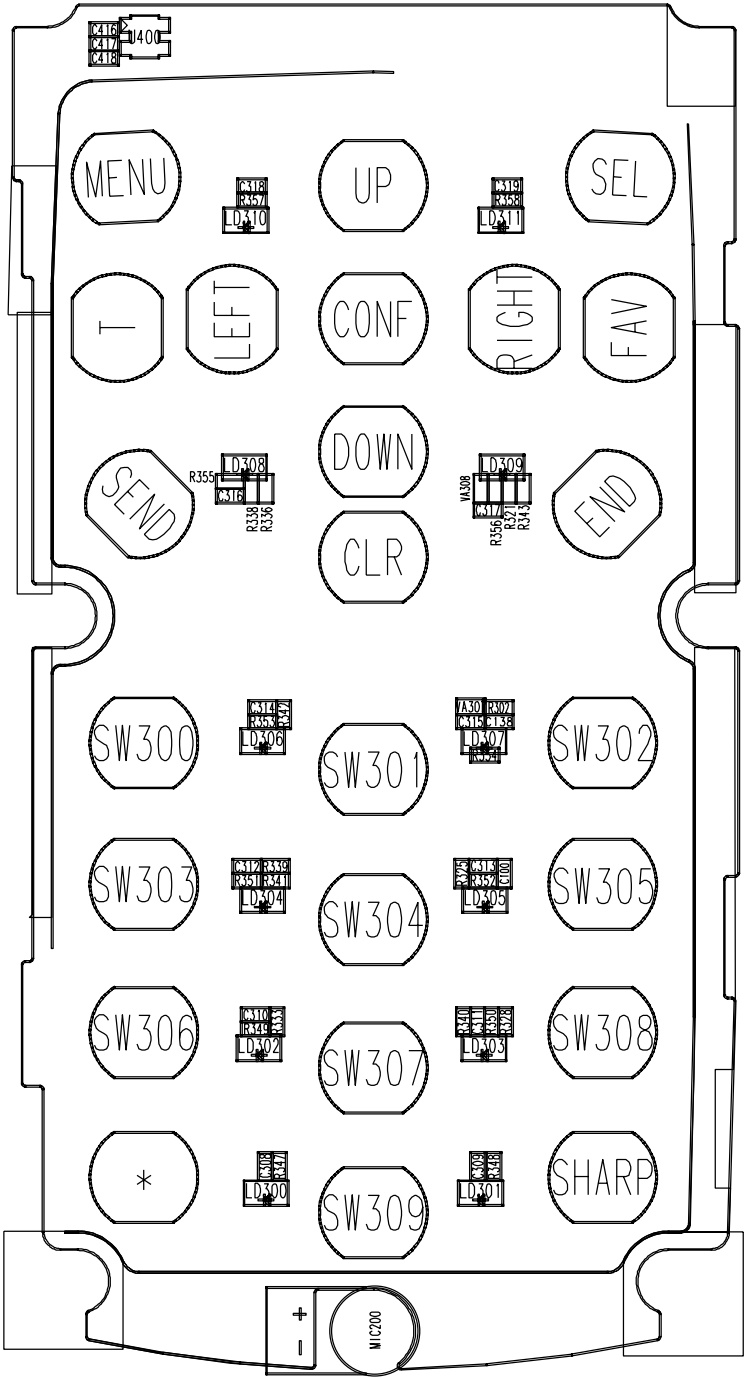


U600 BCM2048 (EUSY0319601) PIN MAP

 Not used

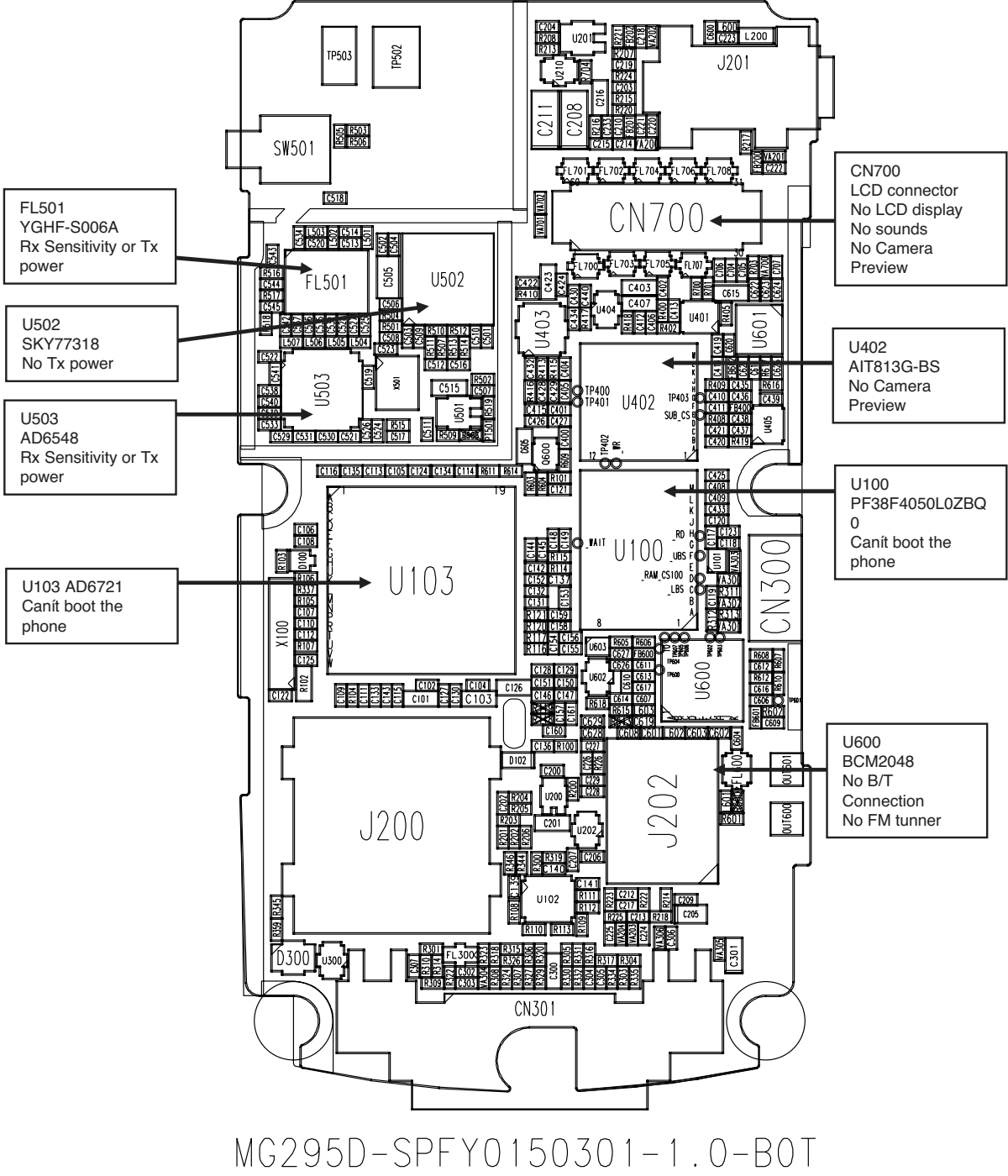


8. PCB LAYOUT

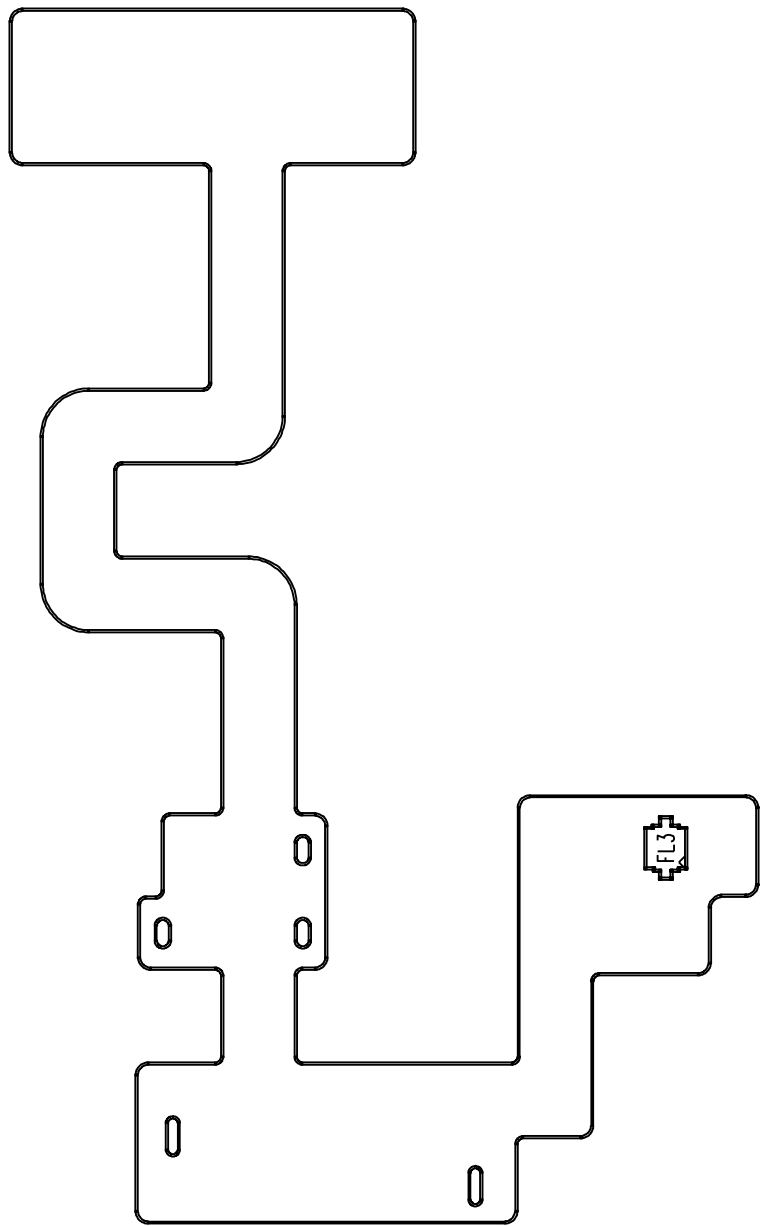


MG295D-SPFY0150301-1.0-TOP

8. PCB LAYOUT

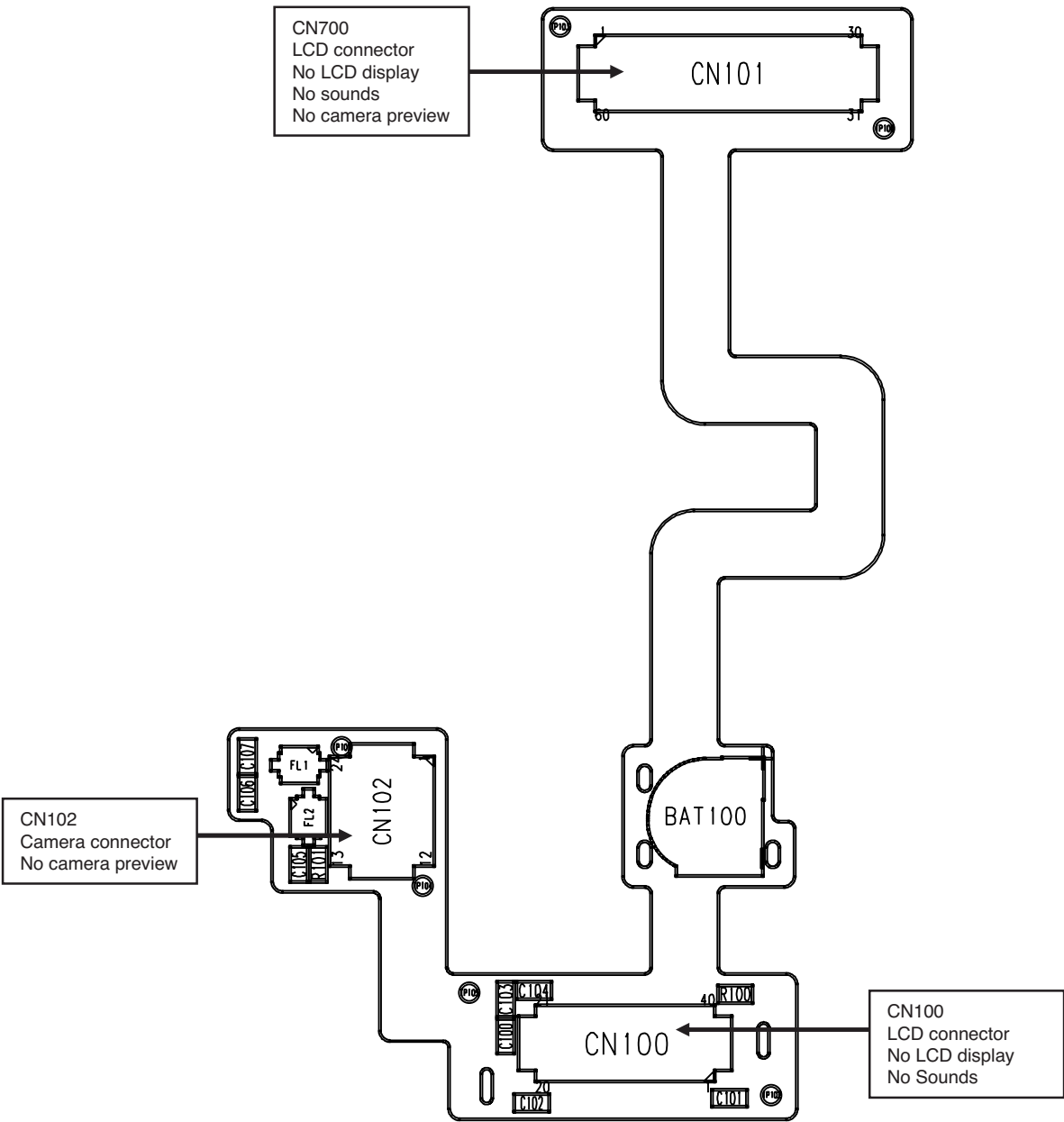


8. PCB LAYOUT



MG295D-FPCB-SPCY0102601-1.0-T0P

8. PCB LAYOUT



MG295D-FPCB-SPCY0102601-1.0-B0T

9. BLOCK DIAGRAM

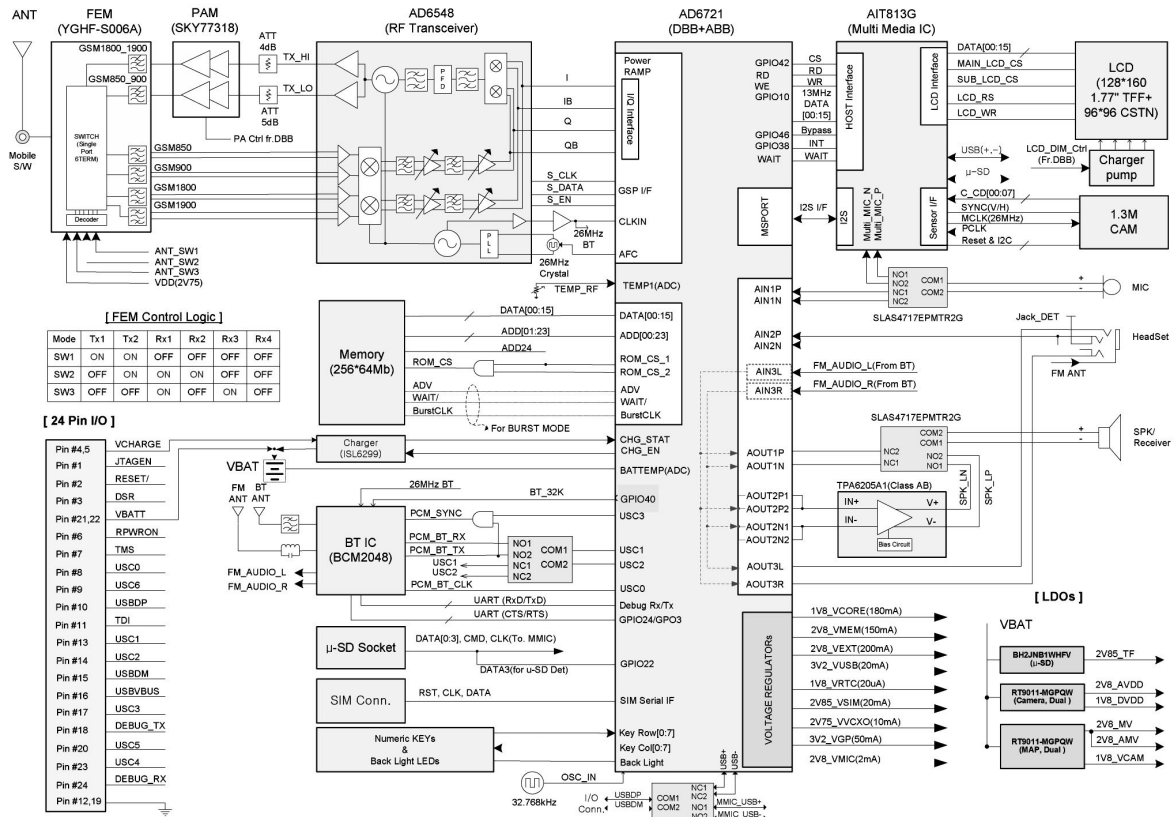


Figure 9.1 LG-MG295 Block Diagram

10. ENGINEERING MODE

10. ENGINEERING MODE

A. About Engineering Mode

Engineering mode is designed to allow a service man/engineer to view and test the basic functions provided by a handset.

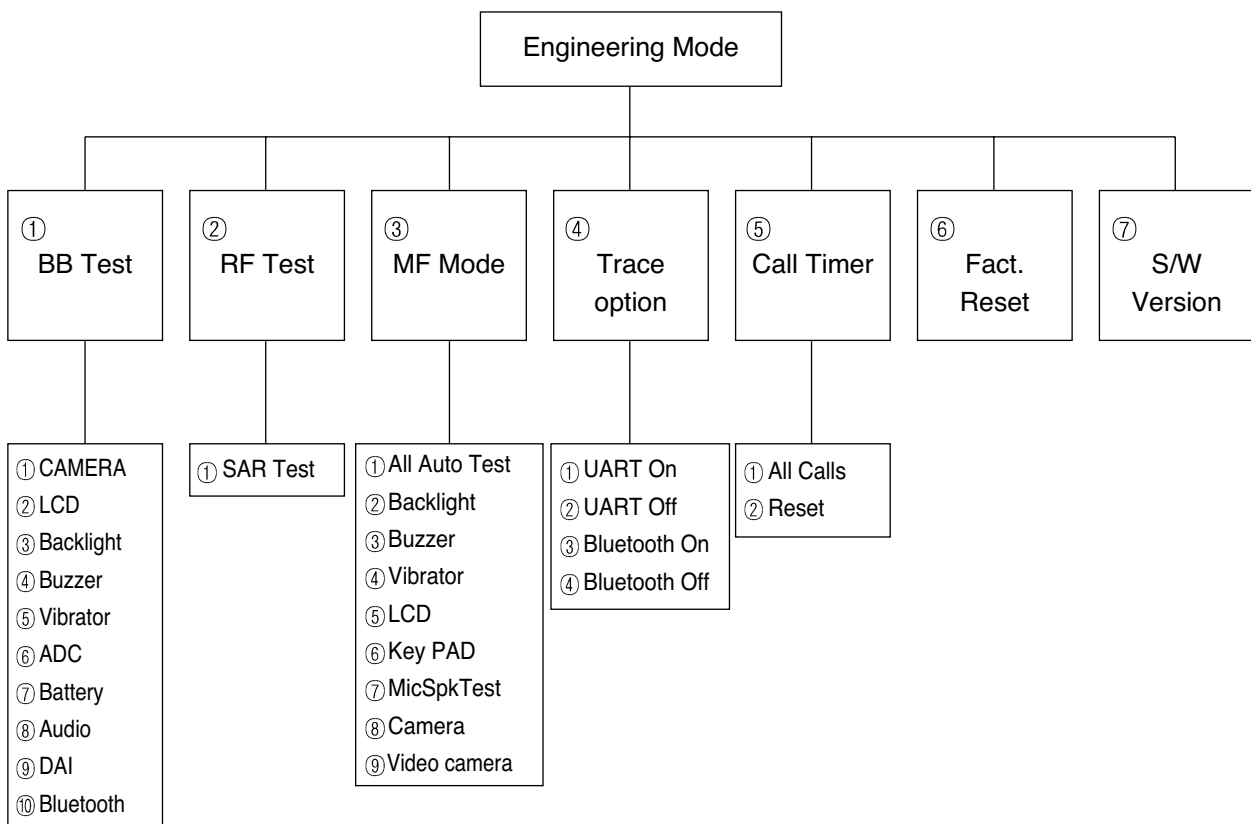
B. Access Codes

The key sequence for switching the engineering mode on is 2945#*#. Pressing END will switch back to non-engineering mode operation.

C. Key Operation

Use Up and Down key to select a menu and press 'select' key to progress the test. Pressing 'back' key will switch back to the original test menu.

D. Engineering Mode Menu Tree



10.1 BB Test [MENU 1]

10.1.1 CAMERA

This menu is to test the Camera.

- 1) Main LCD preview : It shows the picture on Main LCD.

10.1.2 LCD

- 1) Brightness
- 2) COLOUR : WHITE, RED, GREEN, BLUE, BLACK

10.1.3 Backlight

This menu is to test the LCD Backlight.

- 1) Backlight on : LCD Backlight on.
- 2) Backlight off : LCD Backlight off.
- 3) Backlight value : This controls brightness of Backlight. When entering into the menu, the present backlight-value in the phone is displayed. Use Left/Right key to adjust the level of brightness. The value of the brightness set at last will be saved in the NVRAM.

10.1.4 Buzzer

This menu is to test the melody sound.

- 1) Melody on : Melody sound is played through the speaker.
- 2) Melody off : Melody sound is off.

10.1.5 Vibrator

This menu is to test the vibration mode.

- 1) Vibrator on : Vibration mode is on.
- 2) Vibrator off : Vibration mode is off.

10. ENGINEERING MODE

10.1.6 ADC (Analog to Digital Converter)

This displays the value of each ADC.

- 1) MVBAT ADC : Main Voltage Battery ADC
- 2) AUX ADC : Auxiliary ADC
- 3) TEMPER ADC : Temperature ADC

10.1.7 BATTERY

- 1) Bat Cal : This displays the value of Battery Calibration. The following menus are displayed in order :
BAT_LEV_4V, BAT_LEV_3_LIMIT, BAT_LEV_2_LIMIT, BAT_LEV_1_LIMIT,
BAT_IDLE_LIMIT, BAT_INCALL_LIMIT, SHUT_DOWN_VOLTAGE,
BAT_RECHARGE_LMT
- 2) TEMP Cal : This displays the value of Temperature Calibration. The following menus are displayed
in order : TEMP_HIGH_LIMIT, TEMP_HIGH_RECHARGE_LMT,
TEMP_LOW_RECHARGE_LMT, TEMP_LOW_LIMIT

10.1.8 Audio

This is NOT a necessary menu to be used by neither engineers nor users.

10.1.9 DAI (Digital Audio Interface)

This menu is to set the Digital Audio Interface Mode for Speech Transcoder and Acoustic testing.

- 1) DAI AUDIO : DAI audio mode
- 2) DAI UPLINK : Speech encoder test
- 3) DAI DOWNLINK : Speech decoder test
- 4) DAI OFF : DAI mode off

10.1.10 Bluetooth

This menu is to set the Bluetooth test

- 1) Enter test mode
- 2) Test TX Channel
- 3) Bypass mode ON
- 4) Bypass mode off

10.2 RF Test [MENU 2]

10.2.1 SAR test

This menu is to test the Specific Absorption Rate.

- 1) SAR test on : Phone continuously process TX only. Call-setup equipment is not required.
- 2) SAR test off : TX process off

10.3 MF mode [MENU 3]

This manufacturing mode is designed to do the baseband test automatically. Selecting this menu will process the test automatically, and phone displays the previous menu after completing the test.

10.3.1 All auto test

LCD, Backlight, Vibrator, Buzzer, Key Pad, Mic & Speaker,

10.3.2 Backlight

LCD Backlight is on for about 1.5 seconds at the same time, then off.

10.3.3 Buzzer

This menu is to test the volume of Melody. It rings in the following sequence. Volume 1, Volume 2, Volume 3, Volume 0 (mute), Volume 4, Volume 5.

10.3.4 Vibrator

Vibrator is on for about 1.5 seconds.

10.3.5 LCD

1)LCD

Main LCD screen resolution tests horizontally and vertically one by one and fills the screen.

10.3.6 Key pad

When a pop-up message shows 'Press Any Key', you may press any keys including side keys, but not [Soft2 Key]. If the key is working properly, name of the key is displayed on the screen. Test will be completed in 15 seconds automatically.

10. ENGINEERING MODE

10.3.7 MicSpk Test

The sound from MIC is recorded for about 3 seconds, then it is replayed on the speaker automatically.

10.3.8 Camera Test

This menu is to test camera(preview and capture automatically.)

10.3.9 Video camera Test

This menu is to test Video camera(recording)

10.4 Trace option [MENU 4]

This is NOT a necessary menu to be used by neither engineers nor users.

10.5 Call timer [MENU 5]

This menu is to set the Digital Audio Interface Mode for Speech Transcoder and Acoustic testing.

- 1) All calls : This displays total conversation time. User cannot reset this value.
- 2) Reset settings : This resets total conversation time to this, [00:00:00].

10.6 Fact. Reset [MENU 6]

This Factory Reset menu is to format data block in the flash memory and this procedure set up the default value in data block.

Attention

- ① Fact. Reset (i.e.Factory Reset) should be only used during the Manufacturing process.
- ② Servicemen should NOT progress this menu, otherwise some of valuable data such as Setting value, RF Calibration data, etc. cannot be restored again.

10.7 S/W version

This displays software version stored in the phone.

11. STAND ALONE TEST

11.1 Introduction

This manual explains how to examine the status of RX and TX of the model.

A. Tx Test

TX test - this is to see if the transmitter of the phones is activating normally.

B. Rx Test

RX test - this is to see if the receiver of the phones is activating normally.

11.2 Setting Method

A. COM port

- a. Move your mouse on the "Option" button, then click the right button of the mouse and select "Com setting".
- b. In the "Dialog Menu", select the values as explained below.
 - Port : select a correct COM port
 - Baud rate : 115000
 - Leave the rest as default values

B. Tx

1. Selecting Channel

- Select one of GSM or DCS/PCS Band and input appropriate channel.

2. Selecting APC

- a. Select either Power level or Scaling Factor.
- b. Power level
 - Input appropriate value GSM850 (between 5~19) or DCS/PCS (between 0~15)
- c. Scaling Factor
 - A 'Ramp Factor' appears on the screen.
 - You may adjust the shape of the Ramp or directly input the values.

C. Rx

1. Selecting Channel

- Select one of GSM850 or DCS/PCS Band and input appropriate channel.

2. Gain Control Index (0~ 26) and RSSI level

- See if the value of RSSI is close to -16dBm when setting the value between 0 ~ 26 in Gain Control Index.
- Normal phone should indicate the value of RSSI close to -16dBm.

11. STAND ALONE TEST

11.3 Means of Test

- Select a COM port
- Set the values in Tx or Rx
- Select band and channel
- After setting them all above, press connect button.
- Press the start button

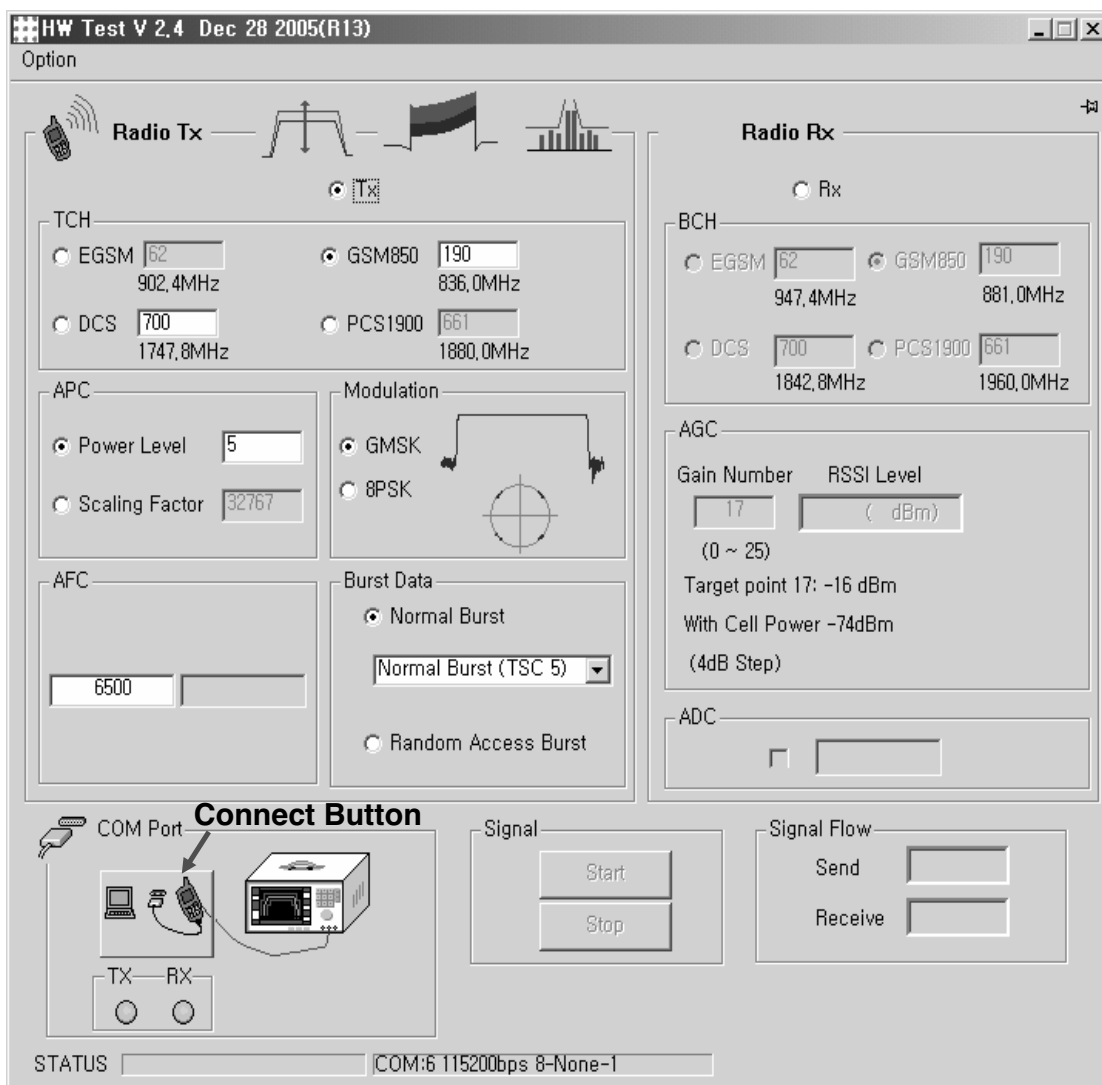


Figure 11.3.1 HW test program

11. STAND ALONE TEST

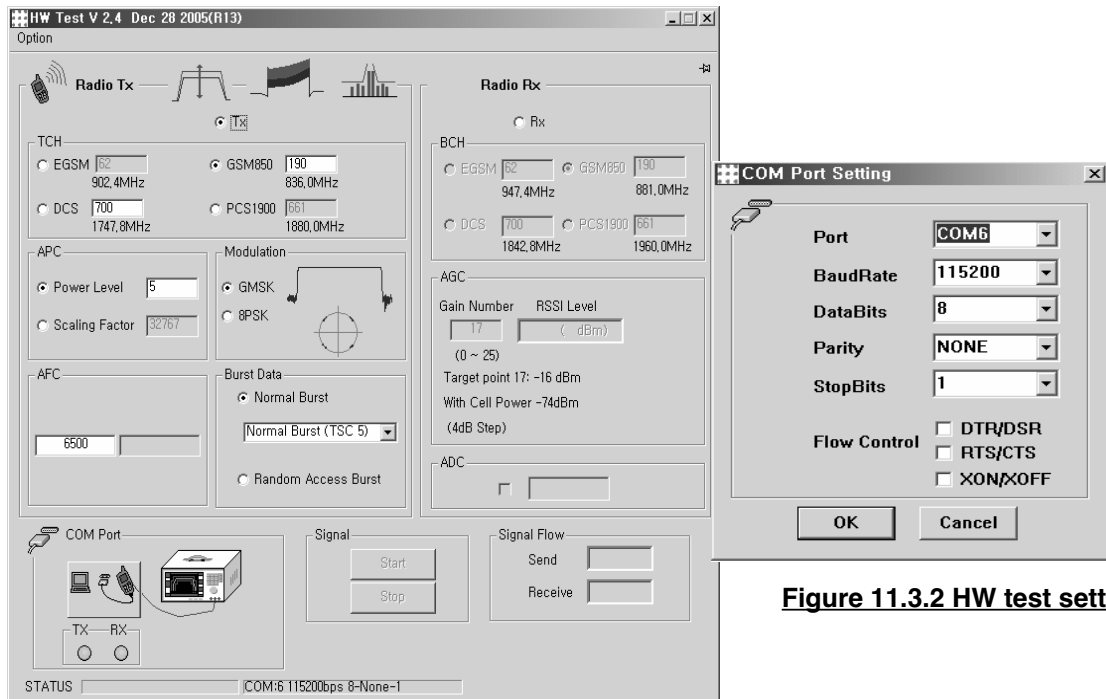


Figure 11.3.2 HW test setting

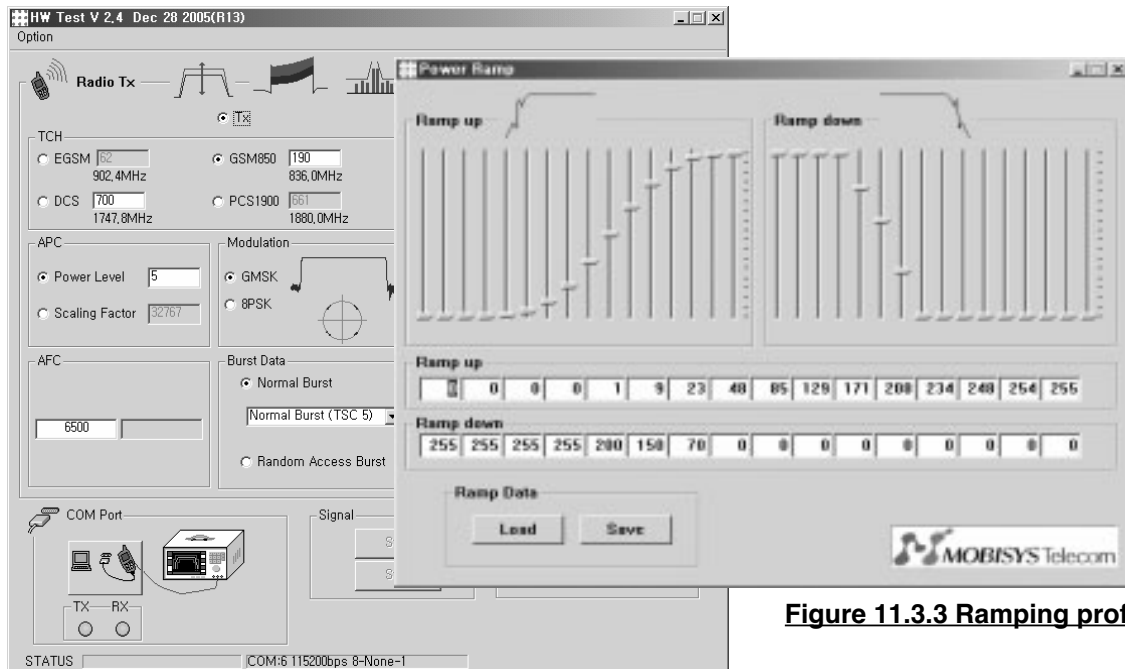


Figure 11.3.3 Ramping profile

12. AUTO CALIBRATION

12. AUTO CALIBRATION

12.1 Overview

Auto-cal (Auto Calibration) is the PC side Calibration tool that perform Tx, Rx and Battery Calibration with Agilent 8960(GSM call setting instrument) and Tektronix PS2521G(Programmable Power supply). Auto-cal generates calibration data by communicating with phone and measuring equipment then write it into calibration data block of flash memory in GSM phone.

12.2 Equipment List

Equipment for Calibration	Type / Model	Brand
Wireless Communication Test Set	HP-8960	Agilent
RS-232 Cable and Test JIG		LG
RF Cable		LG
Power Supply	HP-66311B	Agilent
GPIO interface card	HP-GPIB	Agilent
Calibration & Final test software		LG
Test SIM Card		
PC (for Software Installation)	Pentium II class above 300MHz	

Table 12.2.1 Calibration Equipment List.

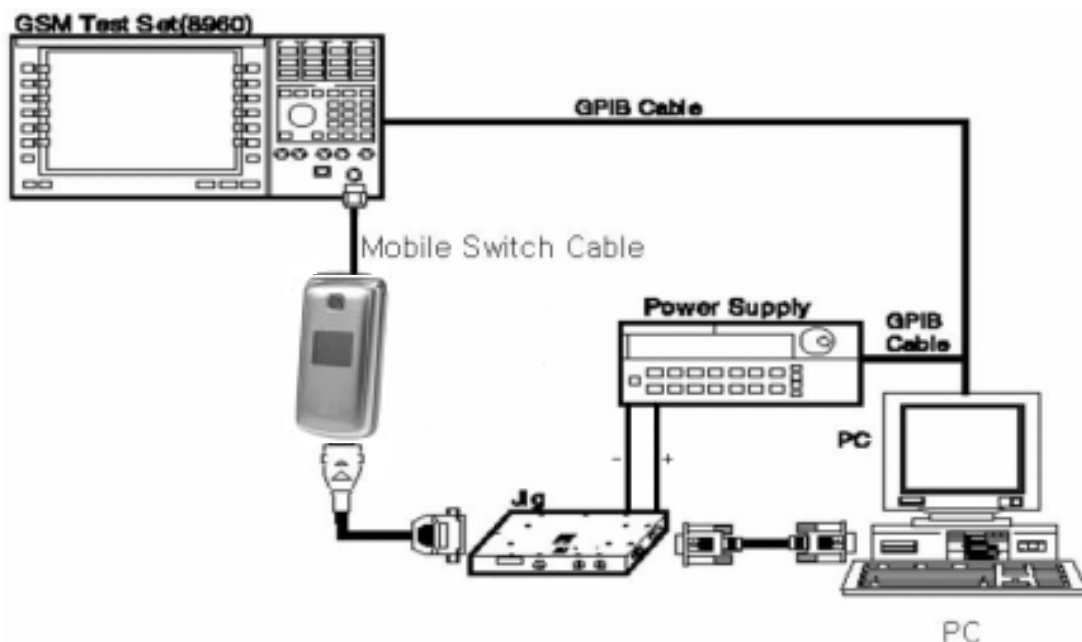


Figure 12.2.1 Equipment Setup

12. AUTO CALIBRATION

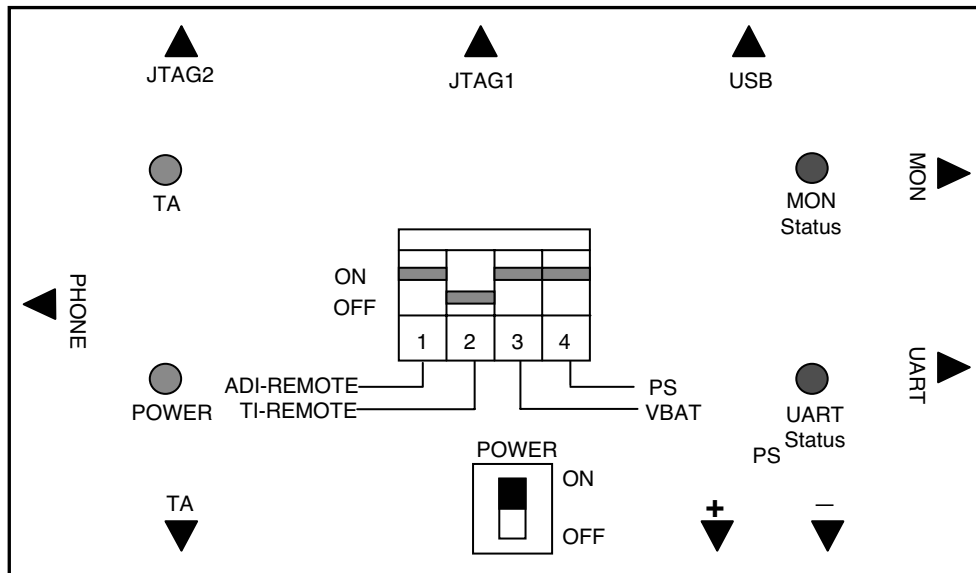


Figure 12.2.2 The top view of Test JIG

12.3 Test Jig Operation

Power Source	Description
Power Supply	Usually 4.0V

Table 12.3.1 Jig Power

Switch Number	Name	Description
Switch 1	ADI-REMOTE	In ON state, phone is awaked. It used ADI chipset.
Switch 2	TI-REMOTE	In ON state, phone is awaked. It is used TI chipset.
Switch 3	VBAT	Power is provided for phone from battery
Switch 4	PS	Power is provided for phone from Power supply

Table 12.3.2 Jig DIP Switch

LED Number	Name	Description
LED 1	Power	Power is provided for Test Jig
LED 2	TA	Indicate charging state of the phone battery
LED 3	UART	Indicate data transfer state through the UART port
LED 4	MON	Indicate data transfer state through the MON port

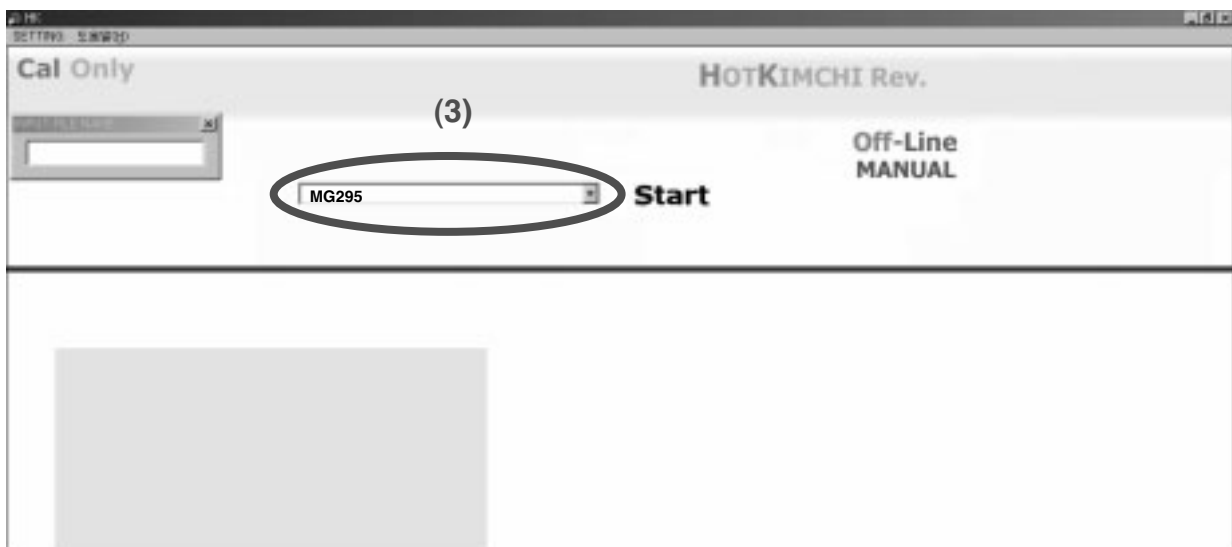
Table 12.3.3 LED Description

12. AUTO CALIBRATION

1. Connect as Fig 6-2(RS232 serial cable is connected between COM port of PC and MON port of TEST JIG, in general)
2. Set the Power Supply 4.0V
3. Set the 3rd, 4th of DIP SW ON state always
4. Press the Phone power key, if the Remote ON is used, 1st ON state

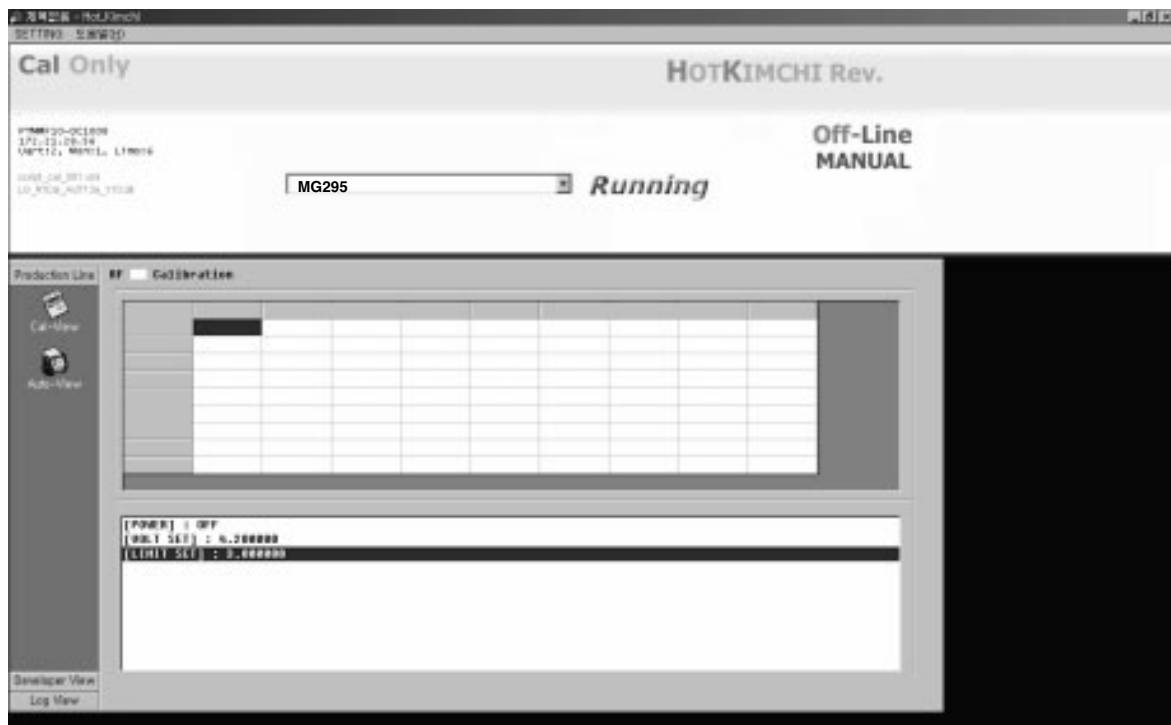
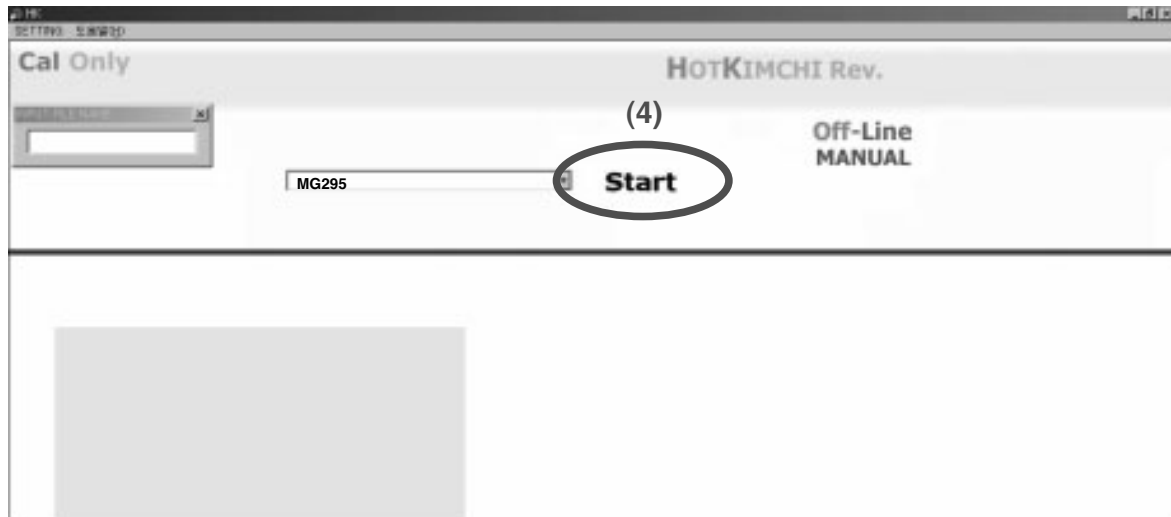
12.4 Procedure

1. Connect as Fig 12.2.2 (RS232 serial cable is connected between COM port of PC and MON port of TEST JIG, in general.)
2. Run Hot_Kimchi.exe to start calibration.
3. From the Calibration menu, Select MG295!



12. AUTO CALIBRATION

4. Press Calibration START



12. AUTO CALIBRATION

12.5 AGC

This procedure is for Rx calibration.

In this procedure, We can get RSSI correction value. Set band EGSM and press Start button the result window will show correction values per every power level and gain code and the same measure is performed per every frequency.

12.6 APC

This procedure is for Tx calibration.

In this procedure you can get proper scale factor value and measured power level.

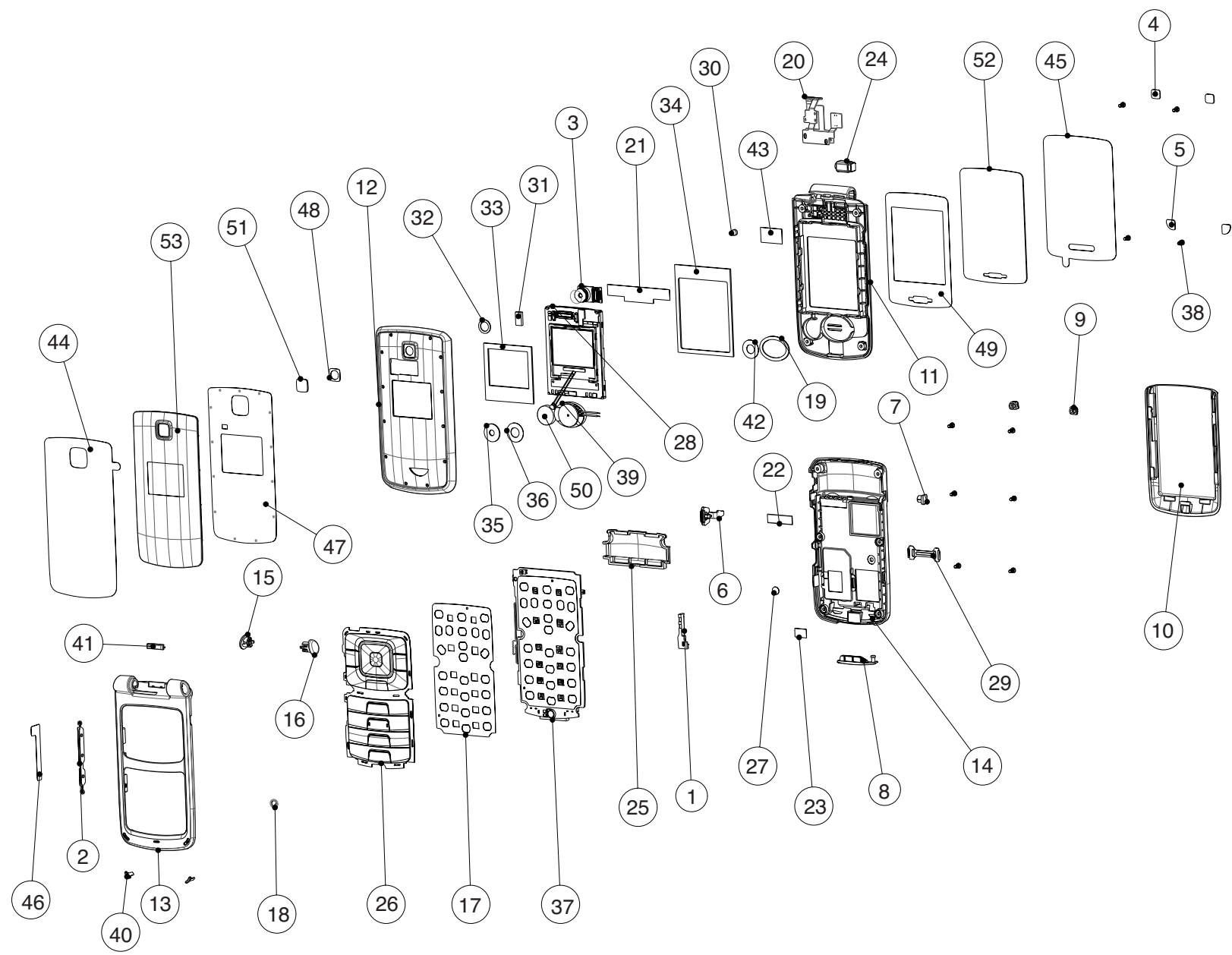
12.7 ADC

This procedure is for battery calibration.

You can get main Battery Config Table and temperature Config Table will be reset.

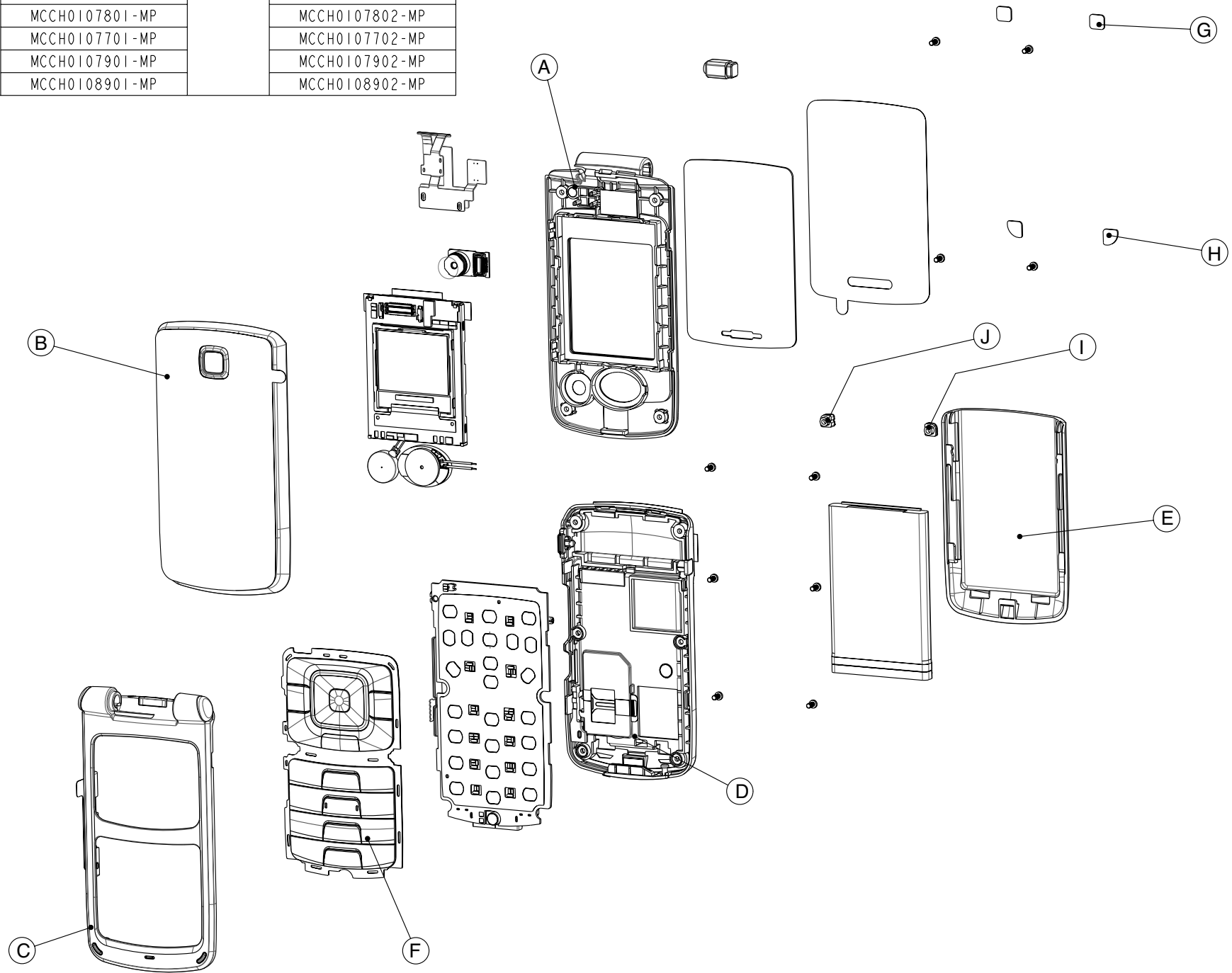
13. EXPLODED VIEW & REPLACEMENT PART LIST

13.1 EXPLODED VIEW



53	WINDOW,LCD(SUB)	I	AWAB0027401-MP	
52	WINDOW,LCD	I	MWAC0080601-MP	
51	WINDOW,CAMERA	I	MWAE0026001-MP	
50	VIBRATOR	I	SJMY0008401-MP	
49	TAPE,WINDOW(MAIN)	I	MTAD0069901-MP	
48	TAPE,WINDOW(CAMERA)	I	MTAD0070001-MP	
47	TAPE,WINDOW (SUB)	I	MTAE0031701-MP	
46	TAPE,PROTECTION (SIDE KEY)	I	MTAB0177601-MP	
45	TAPE,PROTECTION (MAIN)	I	MTAB0177501-MP	
44	TAPE,PROTECTION(SUB WINDOW)	I	MTAB0177401-MP	
43	TAPE,CAMERA	I	MTAK0001501-MP	
42	TAPE (MOTOR)	I	MTAZ0194601-MP	
41	STOPPER,HINGE	I	MSGB0020301-MP	
40	STOPPER,FOLDER	2	MSGC0000801-MP	
39	SPEAKER	I	SUSY0023602-MP	
38	SCREW,MACHINE,BIND	10	GMEY0011201-MP	
37	PCB ASSY, MAIN	I	SPFY0150301-MP	
36	PAD,SPEAKER	I	MPBN0042901-MP	
35	PAD,MOTOR	I	MPBJ0037401-MP	
34	PAD,LCD(MAIN)	I	MPBG0062801-MP	
33	PAD,LCD (SUB)	I	MPBQ0032401-MP	
32	PAD,CAMERA	I	MPBT0043001-MP	
31	PAD, CONNECTOR (CAM FPCB)	I	MPBU0004201-MP	
30	MAGNET,SWITCH	I	MMAA0008201-MP	
29	LOCKER (SIM CARD)	I	MLEY0000801-MP	
28	LCD	I	SVLM0023201-MP	
27	LABEL,A/S	I	MLAB0001102-MP	
26	KEYPAD ASSY,MAIN	I	AKAC0000601-MP	
25	INTERNAL ANTENNA	I	SNGF0026702-MP	
24	HINGE (FOLDER)	I	MHFZ0007001-MP	
23	GASKET SHIELD FOAM (Receptacle)	I	MGAZ0056901-MP	
22	GASKET SHIELD FOAM (CNT)	I	MGAD0145101-MP	
21	GASKET (LCD)	I	MGAZ0057001-MP	
20	FPCB,MAIN	I	SACY0062101-MP	
19	FILTER,RECEIVER	I	MFBF0022801-MP	
18	FILTER,MIC	I	MFBF0024001-MP	
17	DOME ASSY,METAL	I	ADCA0067401-MP	
16	DECO,SIDE (RIGHT)	I	MDAC0020201-MP	
15	DECO,SIDE (LEFT)	I	MDAC0020301-MP	
14	COVER,REAR	I	MCJN0068801-MP	
13	COVER,FRONT	I	MCJK0072701-MP	
12	COVER,FOLDER(UPPER)	I	MCJJ0048801-MP	
11	COVER,FOLDER (LOWER)	I	MCJH0039501-MP	
10	COVER,BATTERY	I	MCJA0045001-MP	
9	CAP,SCREW (MAIN)	I	MCCH0107901-MP	
8	CAP,RECEPTACLE	I	MCCE0038301-MP	
7	CAP,MOBILE SWITCH	I	MCCF0044501-MP	
6	CAP,EARJACK	I	MCCC0045601-MP	
5	CAP, SCREW(TOP)	2	MCCH0107701-MP	
4	CAP, SCREW(BOTTOM)	2	MCCH0107801-MP	
3	CAMERA	I	SVCY0013201-MP	
2	BUTTON,SIDE	I	MBJL0042001-MP	
1	BLUETOOTH ANTENNA	I	SNGF0026802-MP	
NO.	PART NAME	Q'TY	DRAWING NO.	REMARK

No.	Part Name	Color	Part No.	Color	Part No.
A	COVER ASSY, LOWER	SV	ACGH0049501-MP	BK	ACGH0049502-MP
B	COVER ASSY, UPPER		ACGJ0064601-MP		ACGJ0064602-MP
C	COVER ASSY, FRONT		ACGK0090601-MP		ACGK0090602-MP
D	COVER ASSY, REAR		ACGM0091701-MP		ACGM0091702-MP
E	COVER, BATTERY		MCJA0045001-MP		MCJA0045002-MP
F	KEYPAD ASSY,MAIN		AKAC0000601-MP		AKAC0000602-MP
G	CAP,SCREW(BOTTOM)		MCCH0107801-MP		MCCH0107802-MP
H	CAP,SCREW(TOP)		MCCH0107701-MP		MCCH0107702-MP
I	CAP,SCREW(LEFT)		MCCH0107901-MP		MCCH0107902-MP
J	CAP,SCREW(RIGHT)		MCCH0108901-MP		MCCH0108902-MP



13. EXPLODED VIEW & REPLACEMENT PART LIST

13.2 Replacement Parts <Mechanic component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
1		GSM(FOLDER)	TGFF0097401		Silver	
2	APEY00	PHONE	APEY0428501		Black	
3	ACGG00	COVER ASSY,FOLDER	ACGG0083501			
4	ACGH00	COVER ASSY, FOLDER(LOWER)	ACGH0049501			A,11
5	MCJH00	COVER,FOLDER(LOWER)	MCJH0039501	MOLD, PC LUPOY SC-1004A, , , ,		
5	MFBB00	FILTER,RECEIVER	MFBB0022801	COMPLEX, (empty), 0.5, , , ,		19
5	MMAA00	MAGNET,SWITCH	MMAA0008201	COMPLEX, (empty), , , , ,	Metal Silver	30
5	MPBG00	PAD,LCD	MPBG0062801	COMPLEX, (empty), 1.1, , , ,		34
5	MTAD00	TAPE,WINDOW	MTAD0069901	COMPLEX, (empty), 0.15, , , ,		49
5	MTAF00	TAPE	MTAZ0194601	COMPLEX, (empty), , , , ,		42
5	MTAK00	TAPE,CAMERA	MTAK0001501	COMPLEX, (empty), 0.15, , , ,		43
4	ACGJ00	COVER ASSY,FOLDER(UPPER)	ACGJ0064601			B
5	AWAB00	WINDOW ASSY,LCD	AWAB0027401			53
6	BFAA00	FILM,INMOLD	BFAA0074901	,SILVER ,0.1 ,39.2 ,81.1	Silver	
5	MCJJ00	COVER,FOLDER(UPPER)	MCJJ0048801	MOLD, PC LUPOY SC-1004A, , , ,		12
5	MICC00	INSERT,FRONT(UPPER)	MICC0008901		Silver	
5	MPBJ00	PAD,MOTOR	MPBJ0037401	COMPLEX, (empty), , , , ,		35
5	MPBN00	PAD,SPEAKER	MPBN0042901	COMPLEX, (empty), , , , ,		36
5	MPBQ00	PAD,LCD(SUB)	MPBQ0032401	COMPLEX, (empty), 1.1, , , ,		33
5	MPBT00	PAD,CAMERA	MPBT0043001	COMPLEX, (empty), 0.4, , , ,		32
5	MPBU00	PAD,CONNECTOR	MPBU0004201	COMPLEX, (empty), , , , ,		31
5	MTAB00	TAPE,PROTECTION	MTAB0177401	COMPLEX, (empty), , , , ,		44
5	MTAD00	TAPE,WINDOW	MTAD0070001	COMPLEX, (empty), 0.2, , , ,		48
5	MTAE00	TAPE,WINDOW(SUB)	MTAE0031701	COMPLEX, (empty), 0.15, , , ,	Black	47
5	MWAE00	WINDOW,CAMERA	MWAE0026001	CUTTING, PMMA MR 200, , , , ,		51
4	ACGK00	COVER ASSY,FRONT	ACGK0090601			C
5	MBJL00	BUTTON,SIDE	MBJL0042001	COMPLEX, (empty), , , , ,		2
5	MCJK00	COVER,FRONT	MCJK0072701	MOLD, PC LUPOY SC-1004A, , , ,		13
5	MDAC00	DECO,SIDE	MDAC0020201	MOLD, PC LUPOY SC-1004A, , , , ,	Silver	16
5	MDAC01	DECO,SIDE	MDAC0020301	MOLD, PC LUPOY SC-1004A, , , , ,	Silver	15
5	MFBD00	FILTER,MIKE	MFBD0024001	COMPLEX, (empty), , , , ,		18
5	MICC00	INSERT,FRONT(UPPER)	MICC0008901		Silver	

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MSGB00	STOPPER,HINGE	MSGB0020301	MOLD, Silicone Rubber KE971-U, , , , ,		41
5	MSGC00	STOPPER,FOLDER	MSGC0000801	MOLD, Silicone Rubber KE971-U, , , , ,		40
5	MTAB00	TAPE,PROTECTION	MTAB0177601	COMPLEX, (empty), , , , ,		46
4	GMZZ00	SCREW MACHINE,BIND	GMEY0011201	1.4 mm,3 mm,MSWR3(BK) ,N ,+ ,NYLOK		38
4	MCCH00	CAP,SCREW	MCCH0107701	COMPLEX, (empty), , , , ,		H,5
4	MCCH01	CAP,SCREW	MCCH0107801	COMPLEX, (empty), , , , ,		G,4
4	MGAZ00	GASKET	MGAZ0057001	COMPLEX, (empty), , , , ,		21
4	MHFZ00	HINGE	MHFZ0007001		Black	24
4	MLAC00	LABEL	MLAZ0038303	PRINTING, (empty), , , , ,	White	
4	MTAB00	TAPE,PROTECTION	MTAB0177501	COMPLEX, (empty), , , , ,		45
4	MWAC00	WINDOW,LCD	MWAC0080601	CUTTING, PMMA MR 200, , , , ,		52
3	ACGM00	COVER ASSY,REAR	ACGM0091701			D
4	MCCC00	CAP,EARPHONE JACK	MCCC0045601	MOLD, Urethane Rubber S190A, , , , ,		6
4	MCCE00	CAP,RECEPTACLE	MCCE0038301	MOLD, Urethane Rubber S190A, , , , ,		8
4	MCJN00	COVER,REAR	MCJN0068801	MOLD, PC LUPOY SC-1004A, , , , ,		14
4	MGAD00	GASKET,SHIELD FORM	MGAD0145101	COMPLEX, (empty), , , , ,		22
4	MGAZ00	GASKET	MGAZ0056901	COMPLEX, (empty), , , , ,		23
4	MLAB00	LABEL,A/S	MLAB0001102	C2000 USASV DIA 4.0	White	27
4	MLEY	LOCKER	MLEY0000801	SIM LOCKER	Silver	29
4	MTAB00	TAPE,PROTECTION	MTAB0188201	COMPLEX, (empty), , , , ,		
4	MTAB01	TAPE,PROTECTION	MTAB0193601	COMPLEX, (empty), , , , ,		
3	GMZZ00	SCREW MACHINE,BIND	GMEY0011201	1.4 mm,3 mm,MSWR3(BK) ,N ,+ ,NYLOK		38
3	MCCF00	CAP,MOBILE SWITCH	MCCF0044501	MOLD, Urethane Rubber S190A, , , , ,		7
3	MCCH00	CAP,SCREW	MCCH0107901	MOLD, Silicone Rubber KE971-U, , , , ,		I,9
3	MCCH01	CAP,SCREW	MCCH0108901	MOLD, Silicone Rubber KE971-U, , , , ,		J
3	MLAK00	LABEL,APPROVAL	MLAA0043002	ME970_BRAZIL		
5	ADCA00	DOME ASSY,METAL	ADCA0067401			17
5	MPBH00	PAD,MIKE	MPBH0031201	COMPLEX, (empty), , , , ,		
5	MLAZ00	LABEL	MLAZ0038301	PID Label 4 Array		

13. EXPLODED VIEW & REPLACEMENT PART LIST

<Main component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
4	SACY00	PCB ASSY,FLEXIBLE	SACY0062101			20
5	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0056601			
6	SACC00	PCB ASSY,FLEXIBLE,SMT BOTTOM	SACC0037101			
7	BAT100	BATTERY,CELL,LITHIUM	SBCL0001701	2 V,0.5 mAh,CYLINDER ,Reflow type BB, Max T 1.67, phi 4.8, Pb-Free		
7	C100	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C101	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C102	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C103	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C104	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C105	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C106	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C107	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	CN100	CONNECTOR, BOARD TO BOARD	ENBY0035901	40 PIN,0.4 mm,ETC , ,H=1.0, Plug		
7	CN101	CONNECTOR, BOARD TO BOARD	ENBY0036701	60 PIN,0.4 mm,ETC , ,H=1.0, Plug		
7	CN102	CONNECTOR, BOARD TO BOARD	ENBY0019101	24 PIN,0.4 mm,STRAIGHT , ,H1.5, MALE		
7	FL1	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
7	FL2	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
7	R100	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
7	R101	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
6	SACD00	PCB ASSY,FLEXIBLE,SMT TOP	SACD0047601			
7	FL3	FILTER,EMI/POWER	SFEY0011601	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm,15pF)		
6	SPCY00	PCB,FLEXIBLE	SPCY0102601	POLYI , mm,MULTI-5 , , , , , , , , , ,		
4	SJMY00	VIBRATOR,MOTOR	SJMY0008401	3 V,80 mA,10*2.7 ,17mm		
4	SUSY00	SPEAKER	SUSY0023602	ASSY ,8 ohm,90 dB,1813 mm,15mm , , , , , , , WIRE		39

Level	Location No.	Description	Part Number	Spec	Color	Remark
4	SVCY00	CAMERA	SVCY0013201	CMOS ,MEGA ,1.3M, Magnachip (1/4"), 8x14x5t, HPCB Type		3
4	SVLM00	LCD MODULE	SVLM0023201	MAIN ,1.77"(128*160)_Sub 1.04"(96*64)CSTN ,33.8*46.24*3.5 ,262k ,TFT ,TM ,LGDP4513_ST7628 ,with SUS NTSC _60% Sub CSTN _SII		28
4	SNGF00	ANTENNA,GSM,FIXED	SNGF0026702	3.0 ,-2.0 dBd,; ,internal, GSM850/1800/1900 ,; ,TRIPLE ,-2.0 ,50 ,3.0		25
4	SNGF01	ANTENNA,GSM,FIXED	SNGF0026802	3.0 ,-2.0 dBd,; ,internal, bluetooth ,; ,SINGLE ,-2.0 ,50 ,3.0		1
3	AKAC00	KEYPAD ASSY,MAIN	AKAC0000601			F,26
3	SAFY00	PCB ASSY,MAIN	SAFY0215501			
4	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0076101			
5	SPKY00	PCB,SIDEKEY	SPKY0047001	POLYI ,0.8 mm,DOUBLE , ,; , , , , , , , , , ,		
5	SUMY00	MICROPHONE	SUMY0003802	FPCB ,-42 dB,4*1.5 ,		
4	SAFF00	PCB ASSY,MAIN,SMT	SAFF0136901			
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0093301			
6	C101	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C102	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C103	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C104	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C105	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C106	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C107	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C108	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C109	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C110	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C111	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C112	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C113	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C114	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C115	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C116	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C117	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C118	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C119	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C120	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C121	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C122	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C123	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C124	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C125	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C126	CAP,CERAMIC,CHIP	ECCH0005602	2.2 uF,16V ,K ,X5R ,HD ,1608 ,R/TP		
6	C127	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C128	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C129	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C130	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C131	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C132	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C133	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C134	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C135	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C136	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C137	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C139	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C140	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C141	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C142	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C143	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C144	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C145	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C146	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C147	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C148	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C149	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C150	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C151	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C152	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C153	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C154	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C155	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C156	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C157	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C158	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C159	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C160	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C161	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C200	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C201	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C203	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C204	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C205	CAP,TANTAL,CHIP	ECTH0004801	10 uF,6.3V ,M ,STD ,1608 ,R/TP		
6	C206	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C207	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	C208	CAP,TANTAL,CHIP	ECTH0005301	100 uF,6.3V ,M ,L_ESR ,3216 ,R/TP ; , , [empty] , [empty] , , [empty] , , 3.2X1.6X1MM , [empty] , [empty] , [empty]		
6	C209	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C210	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C211	CAP,TANTAL,CHIP	ECTH0005301	100 uF,6.3V ,M ,L_ESR ,3216 ,R/TP ; , , [empty] , [empty] , , [empty] , , 3.2X1.6X1MM , [empty] , [empty] , [empty]		
6	C212	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C213	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C214	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C215	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C216	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C217	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C218	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C219	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C220	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C221	CAP,CERAMIC,CHIP	ECCH0000187	150 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C222	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C224	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C225	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C226	CAP,CHIP,MAKER	ECZH0001211	220 nF,10V ,Z ,Y5V ,HD ,1005 ,R/TP		
6	C229	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C233	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C300	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C301	CAP,TANTAL,CHIP	ECTH0004807	10 uF,10V ,M ,STD ,1608 ,R/TP , , , [empty] , [empty] , , -55TO+125C , , [empty] , [empty] , [empty] , [empty]		
6	C302	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C303	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C304	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C305	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C306	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C307	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C400	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C401	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C402	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C403	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C404	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C405	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C406	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C407	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C408	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C409	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C410	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C411	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C412	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C413	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C414	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C415	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C419	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C420	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C421	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C423	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C424	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C425	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C426	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C427	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C428	CAP,CHIP,MAKER	ECZH0001213	0.47 uF,6.3V ,Z ,Y5V ,TC ,1005 ,R/TP		
6	C429	CAP,CHIP,MAKER	ECZH0001213	0.47 uF,6.3V ,Z ,Y5V ,TC ,1005 ,R/TP		
6	C430	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C432	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C433	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C435	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C436	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C437	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C438	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C439	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C440	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C501	CAP,CHIP,MAKER	ECZH0000816	12 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C502	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C503	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C504	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C505	CAP,CERAMIC,CHIP	ECCH0000393	22 uF,6.3V ,M ,X5R ,HD ,2012 ,R/TP		
6	C506	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C507	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C508	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C509	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C510	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C511	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C512	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C513	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C515	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C516	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C517	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C518	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C519	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C521	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C522	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C523	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C524	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C525	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C526	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C527	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C528	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C529	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C530	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C531	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C532	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C533	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C534	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C535	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C536	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C537	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C538	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C539	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C540	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C541	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C542	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C543	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C544	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C545	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C600	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C601	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C602	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C603	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C604	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C605	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C606	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C607	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C608	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C609	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C610	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C611	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C612	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C613	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C614	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C615	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP		
6	C616	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C617	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C618	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C619	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C620	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C621	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C622	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C623	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C624	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C625	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C626	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C627	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C628	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C629	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C704	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C705	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C706	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C707	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	CN301	CONNECTOR,I/O	ENRY0003501	24 PIN,0.5 mm,ANGLE , ,		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	CN700	CONNECTOR, BOARD TO BOARD	ENBY0036801	60 PIN,0.4 mm,ETC , ,H=1.0, Socket		
6	D100	DIODE,SWITCHING	EDSY0017301	VSM ,15 V,100 mA,R/TP ,PB-FREE		
6	D102	DIODE,SWITCHING	EDSY0009901	ESC ,80 V,300 A,R/TP ,1.6*0.8*0.6(t)		
6	D300	DIODE,TVS	EDTY0009501	SC70 ,5.5 V,100 mW,R/TP , , ,5.5 , ,10 , ,100mW ,[empty] ,[empty] ,6P ,5		
6	FB200	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB201	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB202	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB400	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
6	FB600	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FB601	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FB602	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FL300	FILTER,EMI/POWER	SFEY0007101	SMD ,1CH,1608Feedthru ESD/EMI filter for power Pb-free		
6	FL501	FILTER,SEPERATOR	SFAY0007201	850.900 ,1800.1900 ,4.0 dB,4.0 dB, dB, dB,ETC ,Quad band FEM		
6	FL600	FILTER,CERAMIC	SFCY0000901	2450 MHz,2.00*1.25*0.95 ,SMD ,Bluetooth Band Pass Filter		
6	FL700	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
6	FL701	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
6	FL702	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
6	FL703	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
6	FL704	FILTER,EMI/POWER	SFEY0011601	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm,15pF)		
6	FL705	FILTER,EMI/POWER	SFEY0010501	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free		
6	FL706	FILTER,EMI/POWER	SFEY0011601	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm,15pF)		
6	FL707	FILTER,EMI/POWER	SFEY0011601	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm,15pF)		
6	FL708	FILTER,EMI/POWER	SFEY0011601	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (50 Ohm,15pF)		
6	J200	CONN,SOCKET	ENSY0017701	8 PIN,ETC , , mm, Micro-SD, Hinge type		
6	J201	CONN,JACK/PLUG, EARPHONE	ENJE0003102	4 ,4 PIN,BOSS-2		
6	J202	CONN,SOCKET	ENSY0001602	6 PIN,ETC ,5 IRECTIONAL ,2.54 mm,K(GC200)		
6	L200	INDUCTOR,CHIP	ELCH0004103	4.7 uH,K ,1608 ,R/TP ,CHIP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	L501	INDUCTOR,CHIP	ELCH0005002	2.7 nH,S ,1005 ,R/TP ,		
6	L502	INDUCTOR,CHIP	ELCH0001036	5.6 nH,S ,1005 ,R/TP ,PBFREE		
6	L503	CAP,CERAMIC,CHIP	ECCH0000184	2.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	L504	INDUCTOR,CHIP	ELCH0009109	6.8 nH,J ,1005 ,R/TP ,chip coil		
6	L505	INDUCTOR,CHIP	ELCH0009109	6.8 nH,J ,1005 ,R/TP ,chip coil		
6	L506	INDUCTOR,CHIP	ELCH0001032	18 nH,J ,1005 ,R/TP ,PBFREE		
6	L507	INDUCTOR,CHIP	ELCH0001413	22 nH,J ,1005 ,R/TP ,PBFREE		
6	L600	INDUCTOR,CHIP	ELCH0010402	270 nH,M ,1005 ,R/TP ,CHIP		
6	L602	INDUCTOR,CHIP	ELCH0005009	100 nH,J ,1005 ,R/TP ,		
6	L603	INDUCTOR,CHIP	ELCH0012503	56 nH,J ,1005 ,R/TP ,1005,Coil-type,J		
6	PT501	THERMISTOR	SETY0006301	NTC ,10000 ohm,SMD ,1005, 3350~3399k, J, R/T, PBFREE		
6	Q600	TR,BJT,ARRAY	EQBA0002701	EMT6 ,150 mW,R/TP ,NPN, PNP, 150 mA		
6	R100	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R101	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R102	RES,CHIP	ERHY0000512	10M ohm,1/16W,J,1608,R/TP		
6	R103	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R104	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R105	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R106	RES,CHIP,MAKER	ERHZ0000465	3300 ohm,1/16W ,J ,1005 ,R/TP		
6	R107	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R108	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R109	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R110	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R111	RES,CHIP,MAKER	ERHZ0000268	33 Kohm,1/16W ,F ,1005 ,R/TP		
6	R112	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R113	RES,CHIP,MAKER	ERHZ0000245	220 Kohm,1/16W ,F ,1005 ,R/TP		
6	R114	RES,CHIP,MAKER	ERHZ0000320	82 Kohm,1/16W ,F ,1005 ,R/TP		
6	R115	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R116	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		
6	R117	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		
6	R120	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R121	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		
6	R200	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R201	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R203	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R204	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R205	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R206	RES,CHIP,MAKER	ERHZ0000288	470 Kohm,1/16W ,F ,1005 ,R/TP		
6	R207	RES,CHIP,MAKER	ERHZ0000435	20 ohm,1/16W ,J ,1005 ,R/TP		
6	R208	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
6	R213	RES,CHIP,MAKER	ERHZ0000445	220 Kohm,1/16W ,J ,1005 ,R/TP		
6	R214	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R216	RES,CHIP,MAKER	ERHZ0000459	3 Kohm,1/16W ,J ,1005 ,R/TP		
6	R217	RES,CHIP,MAKER	ERHZ0000522	24 ohm,1/16W ,J ,1005 ,R/TP		
6	R218	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R220	RES,CHIP,MAKER	ERHZ0000529	1.5 Kohm,1/16W ,J ,1005 ,R/TP		
6	R221	RES,CHIP,MAKER	ERHZ0000522	24 ohm,1/16W ,J ,1005 ,R/TP		
6	R222	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R223	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R224	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
6	R225	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R226	RES,CHIP,MAKER	ERHZ0000422	15 Kohm,1/16W ,J ,1005 ,R/TP		
6	R300	RES,CHIP,MAKER	ERHZ0002401	12 Kohm,1/16W ,J ,1005 ,R/TP		
6	R311	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R312	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R313	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R314	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R316	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R317	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R318	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R319	RES,CHIP,MAKER	ERHZ0002401	12 Kohm,1/16W ,J ,1005 ,R/TP		
6	R320	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R322	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R323	RES,CHIP,MAKER	ERHZ0000401	0 ohm,1/16W ,J ,1005 ,R/TP		
6	R324	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R327	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R329	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R330	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R331	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R332	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R334	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R335	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R337	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R344	RES,CHIP,MAKER	ERHZ0002401	12 Kohm,1/16W ,J ,1005 ,R/TP		
6	R345	RES,CHIP,MAKER	ERHZ0000220	1500 ohm,1/16W ,F ,1005 ,R/TP		
6	R346	RES,CHIP,MAKER	ERHZ0002401	12 Kohm,1/16W ,J ,1005 ,R/TP		
6	R359	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R400	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R402	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R408	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R409	RES,CHIP	ERHY0000150	75K ohm,1/16W,F,1005,R/TP		
6	R410	RES,CHIP,MAKER	ERHZ0000476	39 Kohm,1/16W ,J ,1005 ,R/TP		
6	R413	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R415	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R416	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R417	RES,CHIP,MAKER	ERHZ0000476	39 Kohm,1/16W ,J ,1005 ,R/TP		
6	R418	RES,CHIP,MAKER	ERHZ0000439	200 Kohm,1/16W ,J ,1005 ,R/TP		
6	R419	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R501	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R502	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R503	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	R504	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R505	INDUCTOR,CHIP	ELCH0001427	2.2 nH,S ,1005 ,R/TP ,Pb Free		
6	R506	INDUCTOR,CHIP	ELCH0001413	22 nH,J ,1005 ,R/TP ,PBFREE		
6	R507	RES,CHIP,MAKER	ERHZ0000522	24 ohm,1/16W ,J ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R509	RES,CHIP,MAKER	ERHZ0000205	1 Mohm,1/16W ,F ,1005 ,R/TP		
6	R510	RES,CHIP	ERHY0003501	220 ohm,1/16W ,J ,1005 ,R/TP		
6	R511	RES,CHIP	ERHY0003501	220 ohm,1/16W ,J ,1005 ,R/TP		
6	R512	RES,CHIP,MAKER	ERHZ0000429	180 ohm,1/16W ,J ,1005 ,R/TP		
6	R513	RES,CHIP,MAKER	ERHZ0000457	30 ohm,1/16W ,J ,1005 ,R/TP		
6	R514	RES,CHIP,MAKER	ERHZ0000429	180 ohm,1/16W ,J ,1005 ,R/TP		
6	R515	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R516	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R517	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R518	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R519	RES,CHIP,MAKER	ERHZ0000244	22 Kohm,1/16W ,F ,1005 ,R/TP		
6	R602	RES,CHIP,MAKER	ERHZ0000222	150 Kohm,1/16W ,F ,1005 ,R/TP		
6	R603	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R604	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R605	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R606	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R607	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R608	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R609	RES,CHIP	ERHY0003501	220 ohm,1/16W ,J ,1005 ,R/TP		
6	R610	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R611	RES,CHIP,MAKER	ERHZ0000529	1.5 Kohm,1/16W ,J ,1005 ,R/TP		
6	R612	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R614	RES,CHIP,MAKER	ERHZ0000533	7.5 Kohm,1/16W ,J ,1005 ,R/TP		
6	R616	RES,CHIP,MAKER	ERHZ0000529	1.5 Kohm,1/16W ,J ,1005 ,R/TP		
6	R618	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R700	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
6	R701	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
6	R703	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	SW501	CONN,RF SWITCH	ENWY0004601	,SMD , dB,H=2.8, Angle type		
6	U100	IC	EUSY0229501	88 BALL MATRIX SCSP (8*11*1.2) ,80 PIN,R/TP ,256M + 64M PSRAM / IO 3.0V / BOTTOM BOOT / PB FREE		
6	U101	IC	EUSY0227901	SON5-P-0.35(fSV) ,5 PIN,R/TP ,2-INPUT AND GATE, Pb Free		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	U102	IC	EUSY0254701	DFN 3*3*0.9 ,10 PIN,R/TP ,Charger IC, I Max 1A, Wall Adaptor/USB Charger		
6	U103	IC	EUSY0321501	BGA ,361 PIN,R/TP ,13*13		
6	U200	IC	EUSY0223002	HVSOF5 ,5 PIN,R/TP ,150mA CMOS LDO WITH OUTPUT CONTROL / 2.8V		
6	U201	IC	EUSY0250501	SC70 ,5 PIN,R/TP ,Comparator, pin compatible to EUSY0077701		
6	U202	IC	EUSY0300101	WQFN ,10 PIN,R/TP ,Small package Dual SPDT analog Switch, PB-Free		
6	U210	IC	EUSY0300101	WQFN ,10 PIN,R/TP ,Small package Dual SPDT analog Switch, PB-Free		
6	U300	IC	EUSY0317101	WQFN ,10 PIN,R/TP ,1.8*1.4*0.75		
6	U401	IC	EUSY0319001	WDFN-8L ,8 PIN,R/TP ,300mA/300mA 2.8V/1.8V Dual LDO		
6	U402	IC	EUSY0342901	BGA ,144 PIN,R/TP ,1.3M,QCIF15,MP3 ,; ,IC,Digital Signal Processors		
6	U403	IC	EUSY0335701	QFN ,8 PIN,R/TP ,1.2W, Mono, Differential Audio AMP		
6	U404	IC	EUSY0300101	WQFN ,10 PIN,R/TP ,Small package Dual SPDT analog Switch, PB-Free		
6	U405	IC	EUSY0319001	WDFN-8L ,8 PIN,R/TP ,300mA/300mA 2.8V/1.8V Dual LDO		
6	U501	IC	EUSY0196901	SC70-5 ,5 PIN,R/TP ,Single Inverter, Pb Free		
6	U502	PAM	SMPY0014001	35.5 dBm,56 % , A, dBc, dB,6x6x1.15 ,SMD ,Tri Band		
6	U503	IC	EUSY0280101	LFCSP-32 ,32 PIN,R/TP ,GSM QUAD BAND TRANSCEIVER, Othello G.		
6	U600	IC	EUSY0319601	SKUFBG ,80 PIN,R/TP ,Bluetooth+FM (5.5*5.5*0.6)		
6	U601	IC	EUSY0336501	TSOPJW ,12 PIN,R/TP ,		
6	U602	IC	EUSY0317101	WQFN ,10 PIN,R/TP ,1.8*1.4*0.75		
6	U603	IC	EUSY0227901	SON5-P-0.35(fSV) ,5 PIN,R/TP ,2-INPUT AND GATE, Pb Free		
6	VA200	DIODE,TVS	EDTY0009101	SOD-923 ,5 V,150 mW,R/TP ,1.0*0.6*0.4		
6	VA201	VARISTOR	SEVY0004001	18 V , ,SMD ,3pF, 1005		
6	VA202	VARISTOR	SEVY0004001	18 V , ,SMD ,3pF, 1005		
6	VA203	VARISTOR	SEVY0004101	5.6 V , ,SMD ,360pF, 1005		
6	VA204	VARISTOR	SEVY0004101	5.6 V , ,SMD ,360pF, 1005		
6	VA300	DIODE,TVS	EDTY0009101	SOD-923 ,5 V,150 mW,R/TP ,1.0*0.6*0.4		
6	VA301	DIODE,TVS	EDTY0009101	SOD-923 ,5 V,150 mW,R/TP ,1.0*0.6*0.4		
6	VA302	VARISTOR	SEVY0004201	14 V , ,SMD ,120pF, 1005		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	VA303	VARISTOR	SEVY0004201	14 V ,SMD ,120pF, 1005		
6	VA304	VARISTOR	SEVY0004101	5.6 V ,SMD ,360pF, 1005		
6	VA305	VARISTOR	SEVY0004101	5.6 V ,SMD ,360pF, 1005		
6	VA306	VARISTOR	SEVY0004101	5.6 V ,SMD ,360pF, 1005		
6	VA700	VARISTOR	SEVY0004101	5.6 V ,SMD ,360pF, 1005		
6	VA701	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA702	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	X100	X-TAL	EXXY0004602	.032768 MHz,20 PPM,12.5 pF,65000 ohm,SMD ,6.9*1.4*1.3 ,		
6	X501	X-TAL	EXXY0024401	26 MHz,10 PPM,10 pF,.5 ohm,SMD ,32*25*0.6 ,. . . ,10PPM ,10 ,. . . ,SMD ,P/TP		
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0092501			
6	C100	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C138	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C308	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C309	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C310	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C311	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C312	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C313	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C314	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C315	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C316	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C317	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C318	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C319	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C416	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C417	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C418	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	LD300	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD301	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD302	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD303	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	LD304	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD305	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD306	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD307	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD308	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD309	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD310	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD311	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	R302	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R321	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R325	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R328	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R333	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R336	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R338	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R339	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R340	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R341	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R342	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R343	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R347	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R348	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R349	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R350	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R351	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R352	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R353	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R354	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R355	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R356	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R357	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		
6	R358	RES,CHIP,MAKER	ERHZ0000451	27 ohm,1/16W ,J ,1005 ,R/TP		

13. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	SPFY00	PCB,MAIN	SPFY0150301	FR-4 , mm,BUILD-UP 8 , , , , , , , , , ,		37
		PCB,MAIN	SPFY0160201	FR-4 ,0.8 mm,BUILD-UP 8 , , , , , , , , , ,		
6	U400	IC	EUSY0250001	Leaded ,4 PIN,R/TP ,Hall IC		
6	VA307	DIODE,TVS	EDTY0009101	SOD-923 ,5 V,150 mW,R/TP ,1.0*0.6*0.4		
6	VA308	VARISTOR	SEVY0004201	14 V, ,SMD ,120pF, 1005		
5	WSYY00	SOFTWARE	WSYY0643201	MG295dP40FL-55-V10b-724-06 AUG 17 2007+5		

13. EXPLODED VIEW & REPLACEMENT PART LIST

13.3 Accessory

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
2	AAAY00	ADDITION	AAAY0256701		Silver	
3	MCJA00	COVER,BATTERY	MCJA0045001	MOLD, PC LUPOY SC-1004A, , , , ,		E,10
3	SBPL00	BATTERY PACK,LI-ION	SBPL0086002	3.7 V,830 mAh,1 CELL,PRISMATIC ,KG120 BATT, Latin American Label, Pb-Free ,; ,3.7 ,830 ,0.2C ,PRISMATIC ,50x34x42 , ,BLACK ,Innerpack ,Latin American Label		
3	SGEY00	EAR PHONE/EAR MIKE SET	SGEY0003503	FG101 ,STERO,Y TYPE 16OHM		
3	SSAD00	ADAPTOR,AC-DC	SSAD0023801	100/250V ,63 Hz,5.2 V,.8 A,IEC 60950(EN 60950) , ,; , , , , ,WALL 2P ,DC PIN PLUG ,		

Note
